7 NEW MACS

Apple Announces Dual-1.42GHz Power Macs, 1GHz iMacs, and More

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Macworld

PLUS 12-Inch PowerBook Reviewed

STOP SPAM

We Test the Top Tools for Resisting the Junk-Mail Onslaught

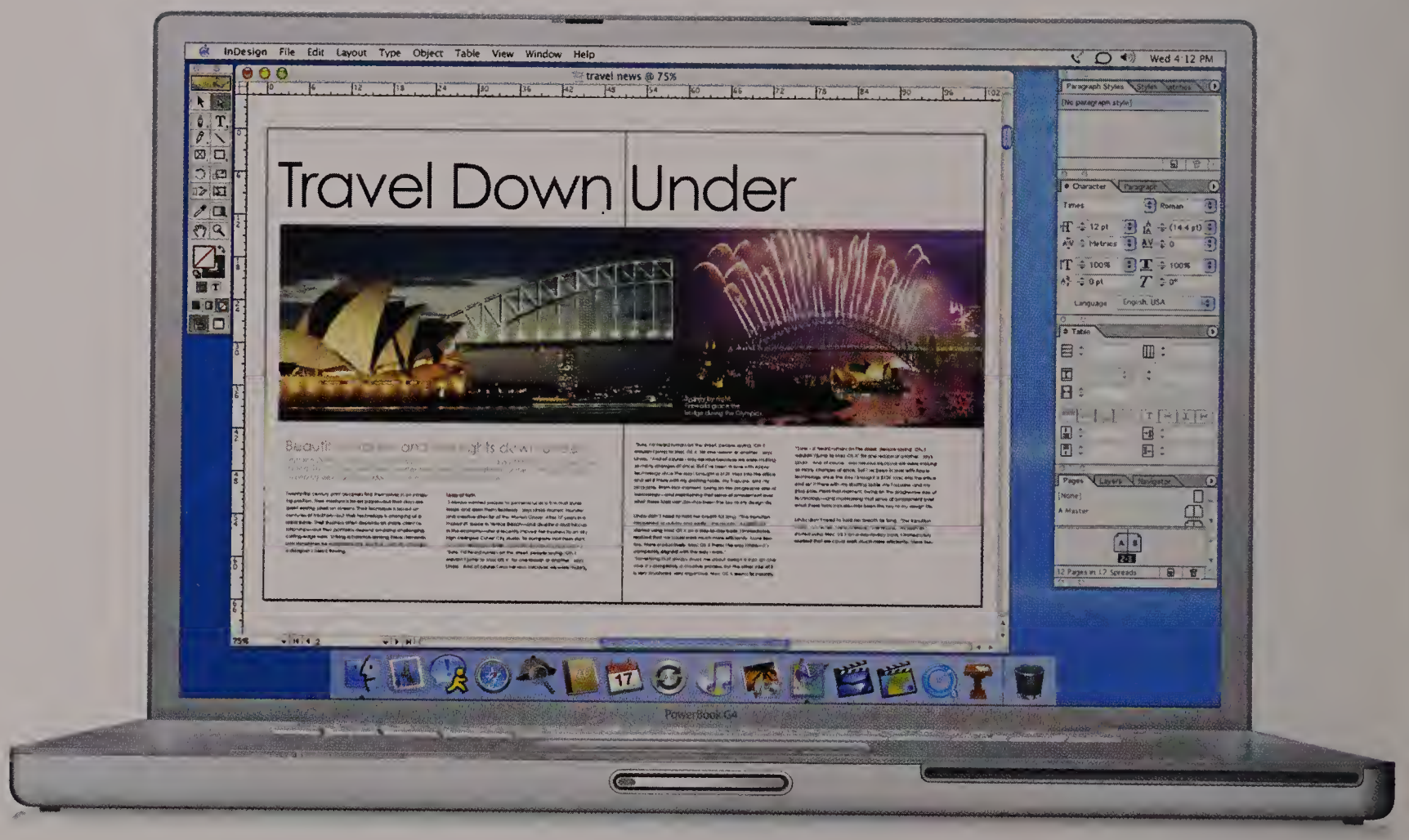
OS X POWER

Take Control of the Command Line with Our Expert Tips

PLUS | 4 New Digital Cameras | QuickBooks Pro 5.0 | Using Stock Media

ABOUT iLIFE

How Do iPhoto, iMovie, and iDVD rate? Read our iLife Reviews and Exclusive Tips, page 70



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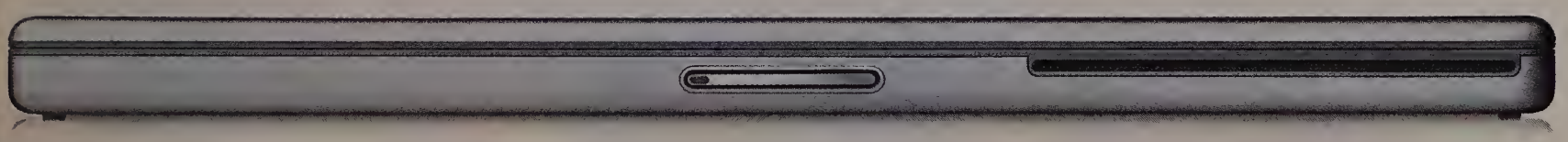

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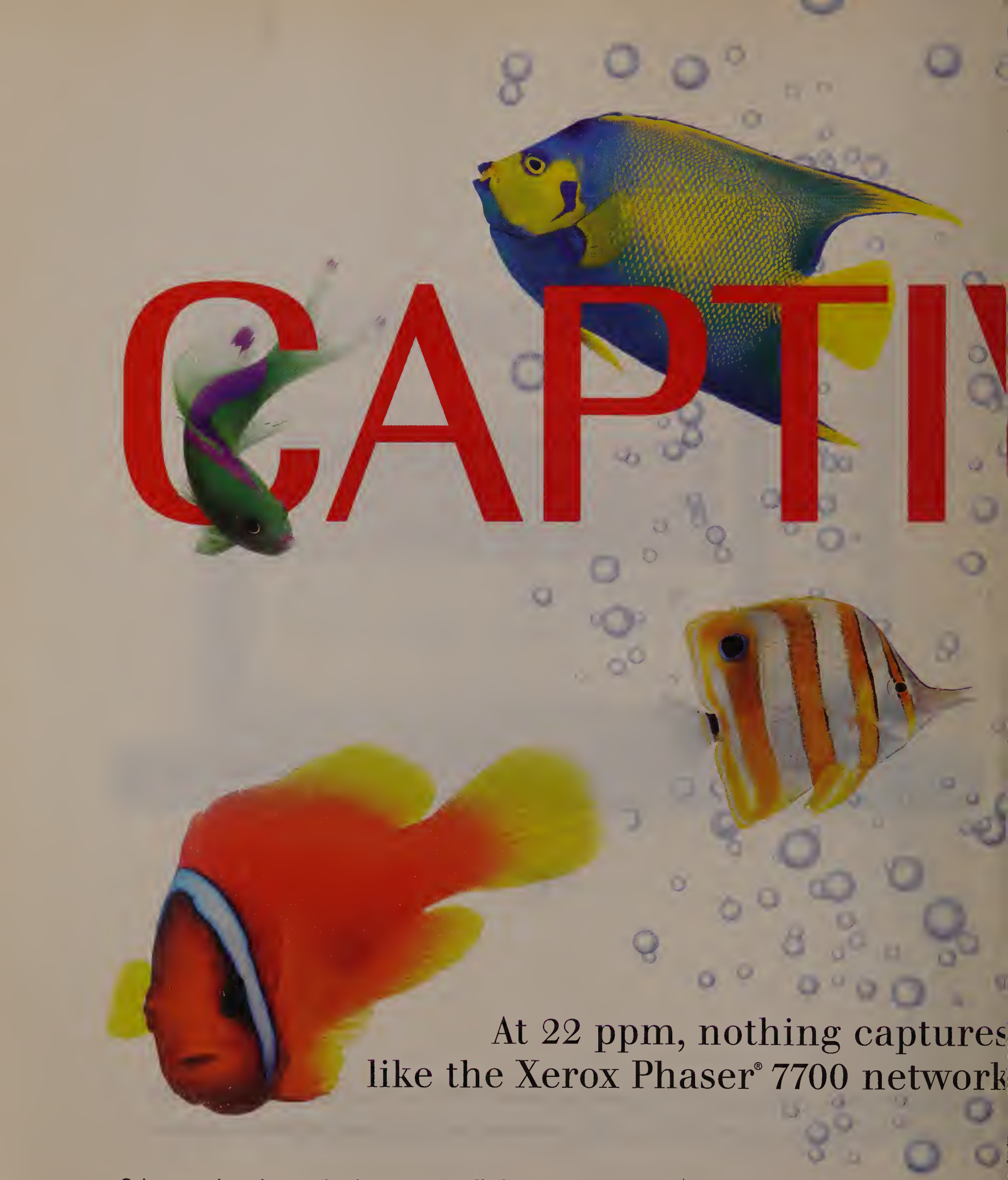

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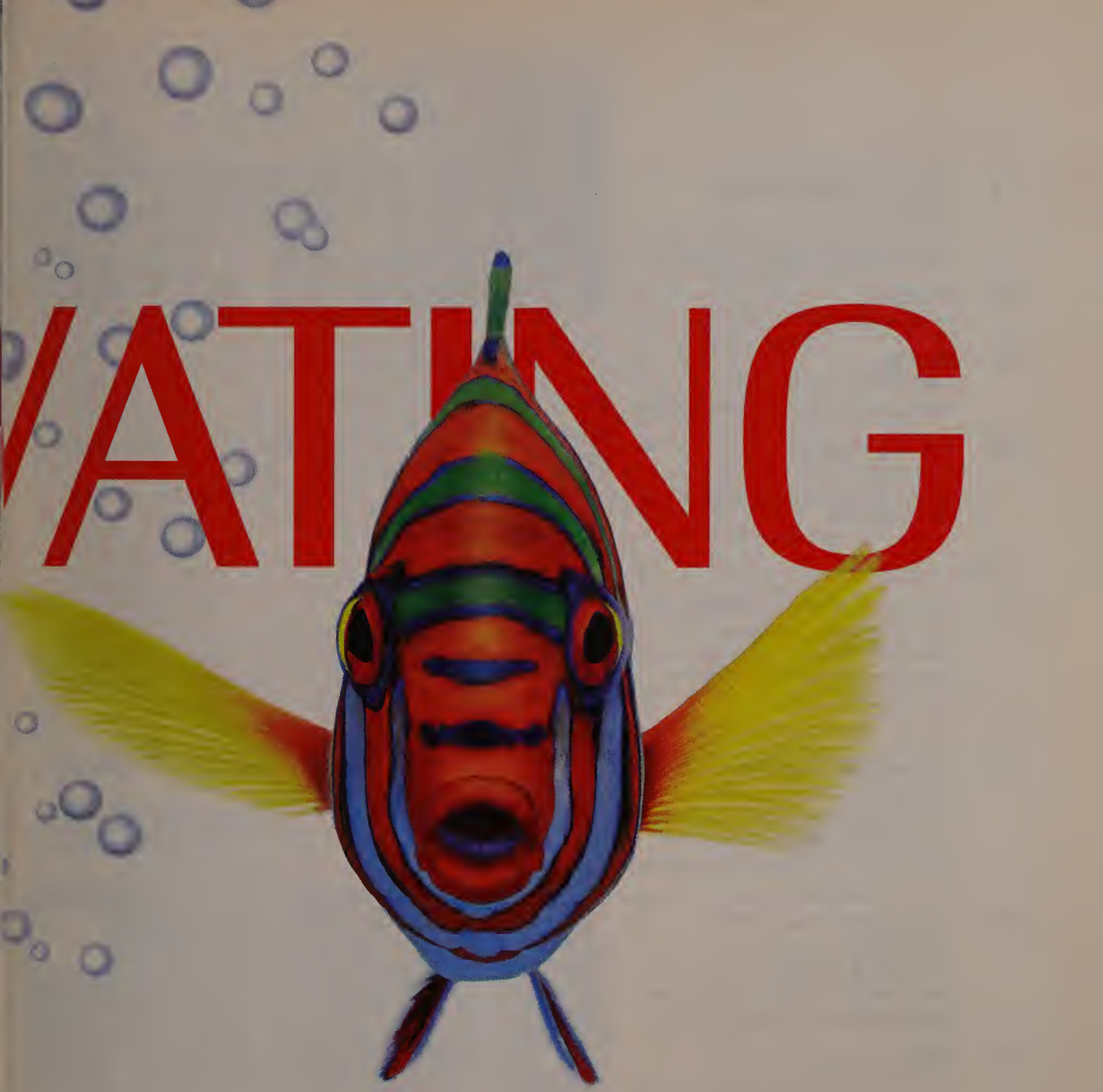

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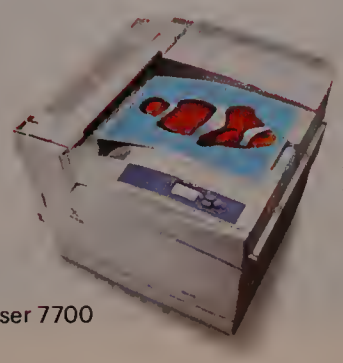

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Macworld

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Finally, Formula One racing comes to the Mac—plus, we've got fantasy heroes, bilingual kids, and a truly amazing game controller.

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BY RICK LEPAGE

I Don't Like Spam! But, Then Again, Who Does?

Spam, Spam, Spam

I MISS THE DAYS WHEN SPAM CAME ONLY FROM A CAN OR, even better, was a Monty Python sketch. Now it's just a nasty part of our wired world. And while I refuse to believe that unsolicited commercial e-mail messages are an inevitability and that we just need to get used to them, I also realize that things must change drastically before the problem goes away. Looking at the news reports from the 2003 Spam Conference (www.spamconference.org), I was distressed to discover that for every programmer or engineer working on products and algorithms to foil spam, there's another developer working on new spamming techniques.

This month's *Macworld* features a helpful article, by Geoff Duncan, about stopping spam (see page 60). It contains plenty of information about useful ways to reduce the clutter that spam brings to your mailbox. But as I read over Geoff's article, two things really hit home for me: First, as good as the current generation of antispam utilities is, their effectiveness still falls short of complete protection. Second, even with the best of today's spam-fighting tools, we still have to spend far too much time and effort personally filtering spam.

Someday, antispam utilities will be as simple and effective as antivirus applications, but I think that day is far away. That doesn't mean you have to hide your head in the sand and wait for the spam problem to go away. After you read our feature, check out the utilities we mention. And if you're looking for more resources, read Ric Ford's Stopping Spam page (www.macintouch.com/spam.html).

New Macs

As we went to press, Apple continued its winter flurry of new products, announcing updates to the Power Mac G4 desktops, as well as to the iMac and eMac lines. The new desktops add FireWire 800 and Bluetooth support, but, more importantly for some users, Apple took steps to reduce the machines' noise level. (For more on Apple's announcements, see *Mac Beat*, page 20.)

It's worth noting that Apple does have a firmware update that is supposed to reduce the noise levels for Mac OS 9 customers with the previous G4 desktops. If you haven't installed the update, you can find out more at Apple's support site (www.info.apple.com).

More Opinions

This month, the back page of *Macworld* changes hands; from now on, it will feature *The Big Picture*, a new opinion column written by Matt Deatherage. (Don't fret, Andy Ihnatko fans: his monthly column continues to appear inside *Macworld;* see page 93.)

Matt is the editor and publisher of the highly regarded Macintosh Weekly Journal and its more-frequent sibling, the Macintosh Daily Journal. If you're a regular reader of Matt's newsletters, you know that he's witty, intelligent, and thought-provoking—often in the same sentence. Whether he's dissecting the latest round of Apple hardware, analyzing new technologies, or discussing Mac development issues, Matt leaves no stone unturned when digging into a topic. This is a rare talent. Many pundits would rather push out half-baked analyses than take the time to delve properly into the nuances of an issue. Matt's insights are so thorough and well written that he helps us all understand the important issues at hand, and his monthly column here in *Macworld* should give you a taste of this sharp Mac mind.

> You can't hide your head in the sand and wait for the spam problem to go away.

If the Mac is central to your life and you aren't familiar with Matt's journals, you should consider subscribing to one of them. At $10 per month, the weekly newsletter is a steal. You can sign up for a free trial at www.macjournals.com.

Diamonds in the Rough

One of the things that makes the Mac market so great is the legion of cool products from smaller developers. These days, every time I turn around I stumble over some smart shareware program or elegant little piece of hardware. These products deserve to be seen by a wider audience.

To that end, you'll find another new column in this month's *Reviews* section: *Mac Gems* (see page 47). This column will call out some of those special applications, utilities, and gadgets that you should know about. I hope that each month's *Mac Gems* column will introduce you to a product or two that will make your Mac life a little easier, more productive, or more fun. □

Does spam bug you, or do you just not fret about it? What's your favorite unsung utility? Drop me a line about these topics, what you're looking for from *Macworld,* or anything else related to the Mac (rick_lepage@macworld.com)—or share your opinions in our online discussion forums (www.macworld.com).

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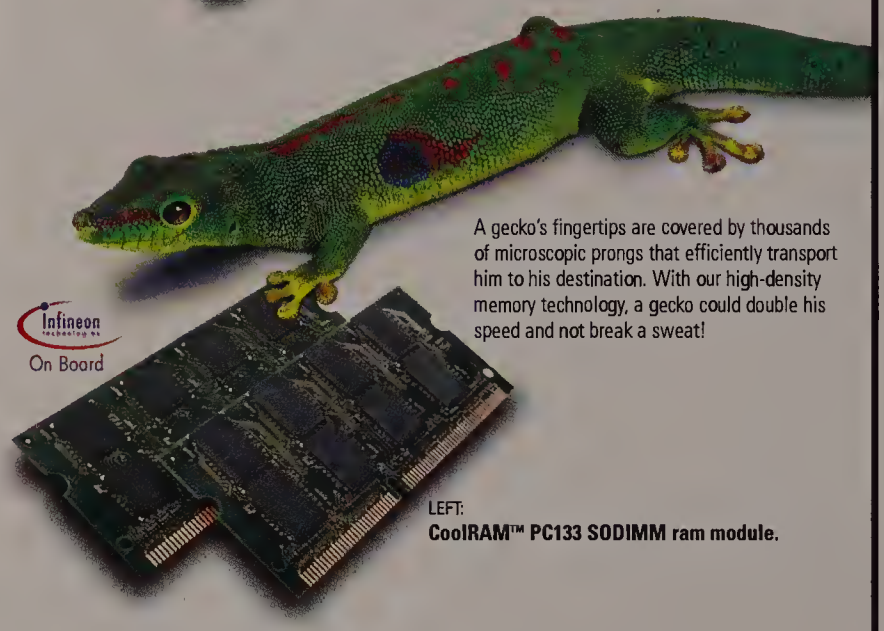

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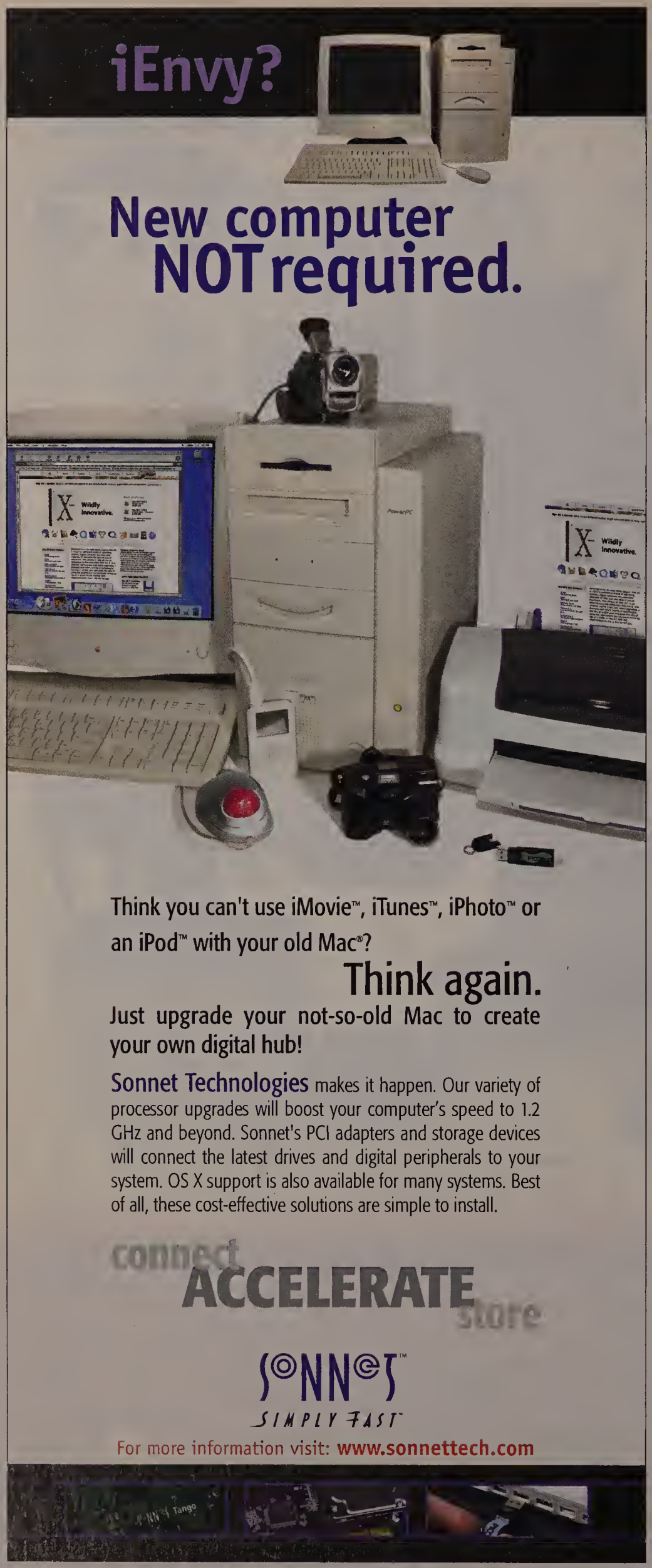

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FEEDBACK

Switched Around

Who cares about switching from PC to Mac? After our January 2003 issue, a different sort of switch may be in order. "I think you should change the name of your magazine to *BreenWorld*," suggested Paul "Pash" Pashbin, citing the many articles the hardworking Christopher Breen contributed to that issue. Other readers wrote to discuss a different kind of switch than the one detailed in our (non-Breen) article on moving from a PC to a Mac. We still believe that switching to OS X is the best move most Mac users can make. But then again, *Classicworld* has a certain ring to it. □

Which Switch Is Which?

MARK SHAPIRO

"PC to Mac" (January 2003) was a nice article. I've used a Mac since 1985. I tried OS X—it's clumsy, hard to back up, and buggy. No thanks. I'll stick with OS 9. When Apple makes OS X–only computers in 2003, I'll likely have to move to a PC, so maybe you should have an article for those not thrilled with OS X—on switching from OS 9 to Windows.

DON FRANZEN

I switched, but not from a PC to a Mac—from OS X 10.2 to OS 9.2. I waited until Apple had gotten the bugs out of OS X. With the triumphant release of Jaguar and the availability of most programs in OS X, I paid my $129 and joined the ranks of OS X users. Then the nightmare began. It was clear that my 450MHz G4 Cube ran markedly slower under OS X than under OS 9. It turned out that most of my programs worked with OS X 10.1 but not OS X 10.2; I had to either use the old OS 9 programs or wait and hope for Jaguar updates. Also, I discovered that AOL for OS X just didn't work on Jaguar—I'm talking about three minutes to download the opening welcome screen. AOL came out with a Jaguar update, but it didn't work. The coup de grâce came when the OS X 10.2.2 update was incompatible with HP Office Director, rendering my printer inoperative and my computer a sluggish, useless (albeit attractive) plastic box. The OS X 10.2.3 upgrade promised to fix various incompatibilities, but I found that AOL still operated at a glacial pace. I've really given up now. I switched—back to the ancient but predictable OS 9.

MICHAEL SIMONE

I've been a Mac consultant and evangelist of all things Macintosh since 1990. During all those years, I've continually praised Apple and Mac OS over Microsoft's wannabe copy, called Windows. One of the main arguments I've used is "Why use Windows, an attempted copy of Mac OS, when you can use the real thing?" And why not use a real operating system, one created from the ground up, instead of a shell OS GUI created on top of an antiquated command-line interface? Oh, OS X is very pretty, and perhaps it's very powerful and stable. But it's no Mac OS. It's just another pretty face—or shell—over Unix. I do show it off to all my PC-entrenched coworkers every chance I get. But would I use it? Never. If you think I'm relearning a new file system that's about as user friendly as Windows 3.1 was, you're crazy. I'll take OS 9 any day. It seems to me that the Empire has struck back. And Steve Jobs has sold out the rebellion and gone over to the dark side. If Apple will no longer let me boot up a Macintosh in a real OS, I'll switch to a shell over a command-line OS that's easier to use: Windows.

PAULA SPEER

David Pogue missed something in his article. In Windows, when you add a file to an open window, it gets put at the end of the list, often out of sight. You have to issue the refresh command to sort the list, which will usually shift your place in the window. This can be a major nuisance. Dear old Mac OS always updates open windows instantaneously and never scrolls their contents unless you ask it to. Also, selecting multiple and noncontiguous files on Windows is clunky and sometimes takes several tries. The Mac does this so smoothly, it feels like an extension of your own mind.

X Tunes

DEREK HATLEY

Since I use my Mac for music a great deal, I appreciated Christopher Breen's "OS X in Tune" (January 2003). I was disappointed, though, that he did not include Finale, by Coda. Finale is the most widely used music-notation program; it has music-capture and -playback features and uses the MIDI format. Finale 2003 is still not OS X native, but it's rumored that Finale 2004 will be.

ROB LEWIS

In addition to being wrong, Breen's statement "serial-port MIDI interfaces . . . will never be compatible with OS X and will need to be replaced" highlights a very sore point with many of us MIDI users. The release notes for OS X 10.2.3 state, "Apple supplies third-party developers with documentation necessary to provide serial [MIDI] support." At the hardware and data-link layers, MIDI is an extremely simple serial protocol. In fact, it will work fine with virtually any serial port on the planet that's capable of using an external clock signal. A competent Unix programmer should be able to knock off the required driver in an afternoon. The only missing piece on modern Macs is a serial port—something that's easily and inexpensively provided by a USB-to-serial adapter or a PCI card. So if equipment companies force us to replace our expensive MIDI gear for OS X compatibility, it's not for any technical reason—they're simply using the OS changeover as an excuse to dig deeper into our wallets.

Regarding Finale, I tried to focus on music-production applications that are dependent on the audio and MIDI technologies incorporated into OS X, rather than notation applications that, while music related, have more in common with page-layout programs. As for serial MIDI support, at the time the article was written, OS X incompatibility for serial MIDI interfaces appeared to be the case—particularly since Apple had dropped support in OS X 10.2.2. However, I've heard from one serial-port–adapter vendor working on a solution that will allow you to use a serial-port MIDI interface with OS X. At this time, I'm not sure whether this solution is tied specifically to the vendor's hardware, or will enable MIDI on any serial-port–bearing Mac or adapter. As I learn more, I'll report it in the online Macworld Weekly Newsletter (visit www.macworld.com/newsletter to subscribe).—Christopher Breen

Don't Fear the Tilde

MAX BUXTON

In the past few issues of *Macworld*, I've seen something that I can't really understand and that gets under my skin—your seeming refusal to use true Unix path names. Get with the program, folks: OS X is based on Unix. There is a long-standing convention for describing file locations. For example, in the January 2003 *Mac 911* column, Christopher Breen writes, "In Mac OS X, iTunes 2 stores its music files in *your user's folder*: Documents: iTunes: iTunes Music." The proper way to refer to this path is simply "In Mac OS X, iTunes 2 stores its music files in ~/Documents/iTunes/iTunes Music." Stop coddling your readers with outdated OS 9–like file-directory descriptions. Give us forward slashes! Give us the tilde! We can take it.

Old Mac, New Life

MARGARET MAULIN

A big thank-you to Lisa Schmeiser for "Recycle Old Macs" (*Secrets*, January 2003). I went to the Share The Technology Web site and found a church in my county that wanted a Performa, and a school within 30 miles that wanted my old laser printer.

HAL HANSON

For just about any Mac user, a machine like a Power Mac 6500/225 with 64MB of RAM is pretty much a doorstop. No need to waste desk space on that clunker, right? If you're going to run Apple software on it, I would agree, but if you run Linux on that same machine, it suddenly springs to life, ready to do a lot of useful things. And I'm not talking about setting up a server of some sort—I'm talking about real, usable desktop applications. To be certain, a graphics-design house is not going to find Linux useful on this level, but less-demanding users can use that machine; the OS and the included applications are everything most businesses need and way more than most individuals need.

Enough Said?

DR. HAYWARD ZWERLING

In the review of iListen 1.5.2 (January 2003), Scholle Sawyer McFarland concludes, "At this point, IBM's ViaVoice—

continues

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although it also has its flaws—is a better choice for most." You forgot to mention that ViaVoice's most significant flaw is the fact that it is not compatible with OS 10.2.1 or 10.2.2.

According to IBM, a free update is now available for ViaVoice for Mac OS X Edition and ViaVoice Simply Dictation for Mac OS X, at www.ibm.com/viavoice/support. It should make both applications work with OS X 10.2.2.—Scholle Sawyer McFarland

Criticism Noted

RICHARD G. BRIBIESCAS

As a faithful user of EndNote since version 1.0, I eagerly awaited the arrival of EndNote 6 (*Reviews*, January 2003), which is geared toward OS X. After downloading the upgrade, I was shocked to find out that I could not scan files. This is simply outrageous. I used the OS 9 version to scan the file I was working on—what's the point of having an OS X version? Not everyone is using Word X (the only program EndNote 6 supports), and this is especially true of researchers, who often must collaborate with others.

Accounting for Quicken

KURT MUELLER

Tom Negrino's review of Quicken 2003 (December 2002) appeases Intuit. Are we Mac users feeling so threatened by the possibility of extinction that we must soft-pedal our complaints about Mac versions of software that don't measure up to Windows versions? For me, Quicken for Mac's inability to access most brokerages for transaction download is a major shortcoming, given that the Windows version has been able to do this for years.

STEPHEN LYTTLETON

I have found many bugs in Quicken 2003 and have spent hours on the phone with Intuit, only to be told that the problem is indeed with the program. Take the short-selling feature you so prominently mention as an improvement. If I sell 1,000 shares short for $3 and buy them back for $2.50, I should have a gain of $500. Simple math, unless you're Quicken 2003 for Mac. Its capital-gains report shows that my total gain is only 50 cents. This seems to happen only with share amounts of 1,000 or greater. Do I have to tell you how dubious I am about the way this program calculates other important financial information? I'm not saying the whole program is junk, but it has serious flaws for financial-tracking software that call into question its four-mouse rating.

Presenting Ideas

REMO DEL BELLO

I enjoyed "Presentation Power Tips" (*Secrets*, January 2003). Franklin N. Tessler suggested saving an HTML and QuickTime version of a presentation, in case of problems with PowerPoint on the presenting computer. He omitted another excellent option—Acrobat. It's particularly easy in OS X to save a PowerPoint presentation as an Adobe Acrobat PDF file and then use the free Acrobat Reader as the presentation software. All you have to do in Acrobat Reader is select Full Screen from the View menu. You lose builds, animations, and transitions with this method, but you lose most of those with the other options as well. Plus, you gain antialiased text and, via the preferences, you can tell Acrobat Reader to use transitions between slides.

BRUCE HORN

Here are some more presentation tips that might help your readers. Whether you'll be using your laptop or one provided by the conference site, contact tech support early. Find out what equipment they'll supply, including the brightness and resolution of the projector, the speed of the laptop, which OS and PowerPoint version that machine runs, and what removable media it supports. See if you can send a draft of your presentation to test with the computer and projector. Make multiple backups, especially if you're traveling a great distance. My choice would be burning a CD, loading the presentation on an FTP or Web server, and printing 35mm slides. Use animations or builds only if they add to your presentation and its pacing. Having animations and builds on every slide and bullet point often slows down a presentation too much and draws the audience's attention away from the presenter and the presentation's content.

Screen Shots Switch, Too

BRIAN LEVY

I didn't know that the Gateway Profile 4XL ran OS 9. The picture accompanying "Lies and Statistics" (*Mac Beat*, December 2002) clearly shows an OS 9 Netscape screen shot.

It's a Man's (Mac) World?

ZENY B. BADUEL

In some issues, you don't publish any letters from female Mac users. Why? Do you not get enough letters from female readers? And for those who do write, is what they say not worth publishing? I'm a full-time college professor who teaches graphic design on Macs, and I encourage my students, mostly females, to read *Macworld*. Wouldn't it be great if they could see comments and feedback from other female Mac users? Publishing only letters from male readers perpetuates the fact that design is a male-dominated field, and that doesn't help my female students, who are struggling to make it in their field. Publishing letters from female readers in every issue would go a long way toward promoting gender equity.

Post comments on our forums (www.macworld.com), or send them by mail to Letters, *Macworld*, 501 Second Street, 5th Floor, San Francisco, CA 94107; or send them by e-mail to letters@macworld.com. Include a return address and daytime phone number. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all letters and posts. All published letters and forum comments become the property of *Macworld*.

CORRECTIONS

In "More Sizes Fit All" (*Mac Beat*, March 2003), we reported an incorrect spec given to us by Apple. After we went to press, the company informed us that the 17-inch PowerBook's DVD-burning speed was 1×.

In "Power Mac Power Boost" (*Mac Beat*, March 2003), we reported an incorrect price given to us by ATI. The ATI Radeon 7000 graphics card sells for $130.

Terry Paczko created the "Wireless Range Testing" infographic in "The Way to Wireless" (March 2003).

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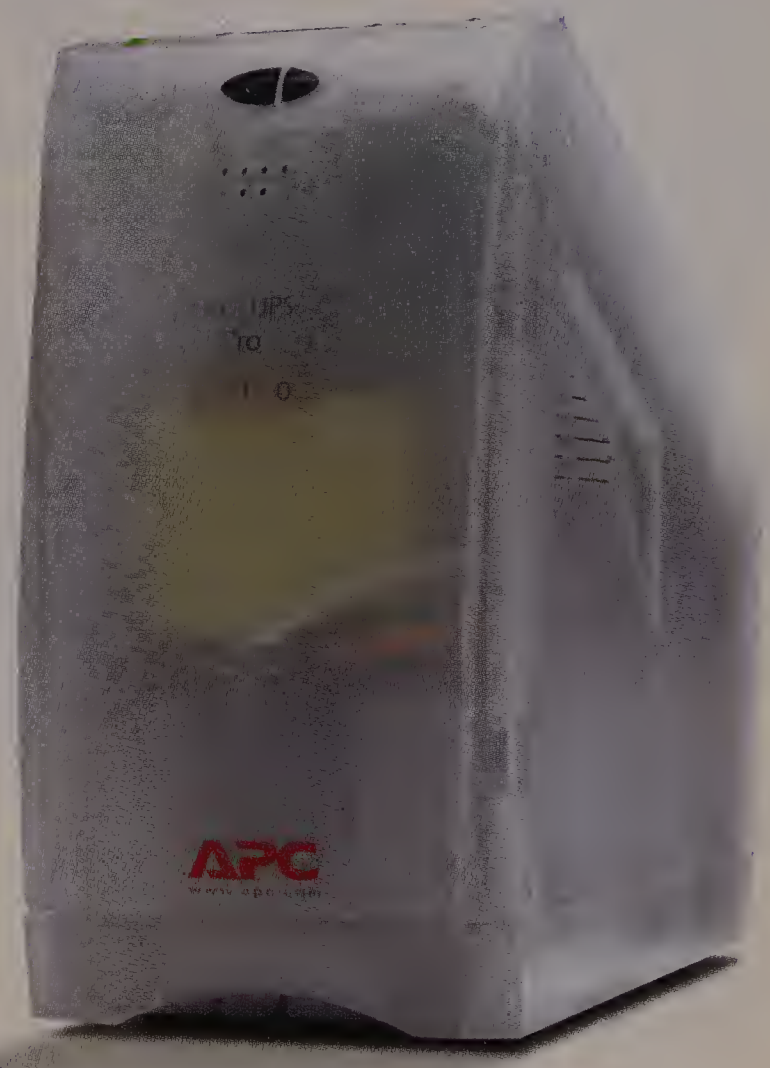

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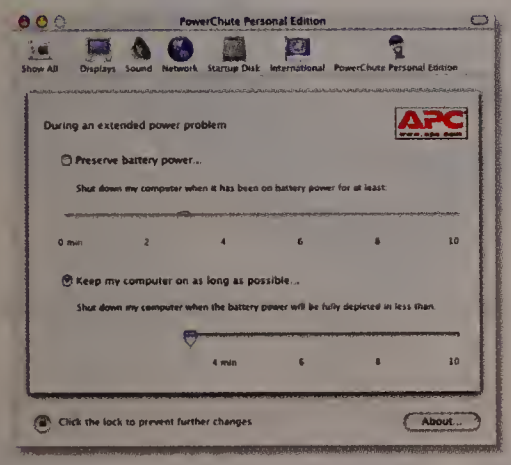

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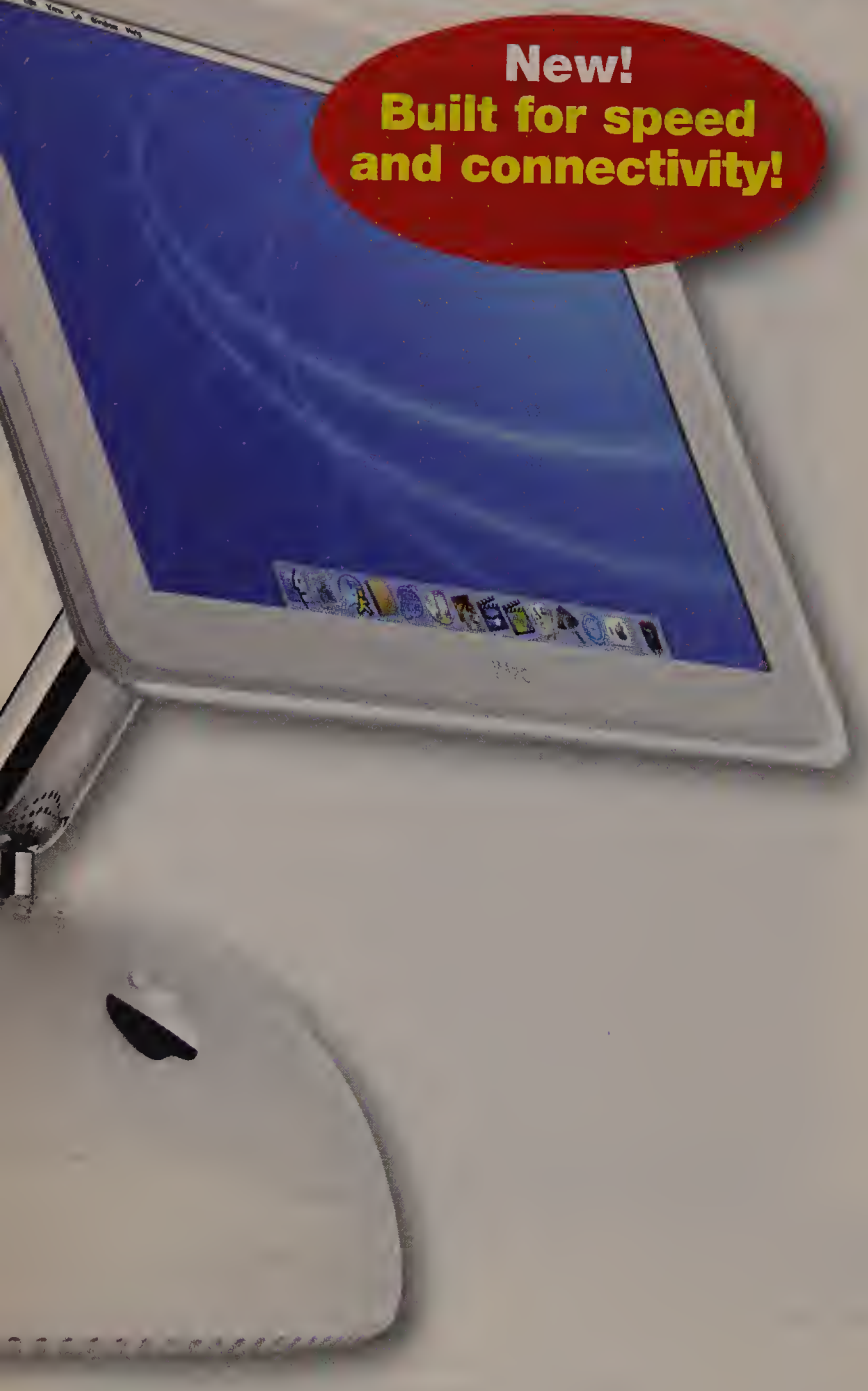

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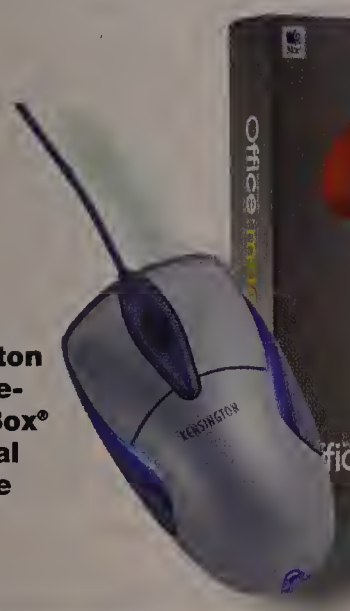

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WITH LATEST UPGRADE, APPLE'S POWER MACS DO MORE, COST LESS

Power Has Its Price

Apple certainly didn't waste any time with its latest hardware update. Less than a month after unveiling new PowerBooks featuring next-generation versions of AirPort and FireWire, the company has revamped its Power Mac desktops to include those two new technologies.

But the additions of AirPort Extreme and FireWire 800, as well as a slight bump to the Power Mac's megahertz rating, represent only part of the picture. Apple also changed the pricing structure for its Power Mac line, cutting the price of the computers by 12 to 20 percent, depending on the model.

The least-expensive Power Mac, which runs on a 1GHz G4 processor, now sells for $1,499, compared with the $1,699 dual-867MHz G4 Apple used to offer as its base model. The midrange dual-processor Power Mac is now $1,999, down from $2,499, and the clock speed on both its G4s has been boosted to 1.25GHz (from 1GHz). And the high-end Power Mac—a dual-1.42GHz G4—costs $2,699, $600 less than what Apple used to charge for a dual-1.25GHz machine.

"In general, we wanted to make these Power Macs faster than they've ever been, increase their expansion capabilities, and make them more affordable than ever before," says Tom Boger, Apple's director of Power Mac product marketing.

Setting Sales

Apple has plenty of incentive for making its top-of-the-line desktops more attractive to consumers. While the company has watched people snap up its PowerBook and iBook laptops, Power Mac sales have languished for nearly a year.

During its 2002 fiscal year, Apple sold 766,000 Power Mac G4s, a drop of 18 percent from what it sold in 2001. In a three-month period ending on December 28, 2002, the company sold 158,000 Power Macs, a 25 percent decline from the 212,000 computers it sold in the same period a year before. And that was after the company had rolled out a redesigned Power Mac line that featured dual processors and Double Data Rate (DDR) RAM in every model.

In financial filings and meetings with Wall Street analysts, Apple blames the sluggish Power Mac sales on a dreary economy and a handful of major Mac apps—notably QuarkXPress—that have yet to make the leap to OS X. The company contends that, put together, those two factors are forcing pro users to delay Power Mac purchases. Still, Apple has talked about its desire to push quarterly Power Mac sales back up to the 200,000-unit mark—hence, the price cuts for its desktop and monitor offerings (see "Flat Panels, Falling Prices," page 22) and the new features aimed at spurring sales.

Featured Performers

In addition to being Bluetooth-enabled (a build-to-order option adds a preinstalled Bluetooth wireless-connectivity module), the new Power Macs support the 802.11g wireless networking standard, which Apple has dubbed AirPort Extreme. Power Mac owners can either order a preinstalled AirPort Extreme card or add one later. While wireless networking may not appear to be a high priority for desktop owners, Greg Joswiak, Apple's vice president of hardware product marketing, believes that AirPort Extreme's maximum theoretical throughput of 54 Mbps should

WHAT'S NEXT

Apple will be showcasing its digital-video offerings at NAB2003. The electronic-media trade show is in Las Vegas, April 7 through 10.

PHOTOS COURTESY OF APPLE

Power Company: Apple's Power Mac G4s

MODEL	PRICE	MEMORY	HARD DRIVE	OPTICAL DRIVE	VIDEO CARD/ DDR SDRAM	BUS SPEED	L3 CACHE
Power Mac G4/1GHz	$1,499	256MB DDR RAM	60GB	Combo drive	Nvidia GeForce4 MX/64MB	133MHz	1MB
Power Mac G4/1.25GHz DP	$1,999	256MB DDR RAM	80GB	Combo drive	ATI Radeon 9000 Pro/64MB	167MHz	1MB per processor
Power Mac G4/1.42GHz DP	$2,699	512MB DDR RAM	120GB	SuperDrive	ATI Radeon 9000 Pro/64MB	167MHz	2MB per processor

"really be an enticement for professional customers. It gives them the throughput they need."

The Power Macs pick up another updated technology that was introduced in Apple's 17-inch PowerBook—FireWire 800. The second generation of the high-speed connection technology has double the maximum data speed of the original FireWire (see "Device Makers Fire Things Up," page 22). With a throughput of 800 Mbps, FireWire 800 also increases the maximum distance of FireWire connections to as far as 100 meters while supporting new types of cabling—making the Power Mac ideal for people who work with large data files such as digital video files.

All three Power Mac models sport a FireWire 800 port, in addition to the two FireWire 400 ports on the back of the tower. Also included are two USB ports, a headphone minijack, front and rear speaker minijacks, audio line-in and line-out ports, and ADC and DVI connectors.

The 1GHz Power Mac marks the return of single-processor Power Macs to Apple's desktop offerings. Other than that, its specifications are nearly identical to the dual-867MHz Power Mac G4 introduced last year—a 133MHz system bus, 1MB of L3 cache, 256MB of DDR RAM, a 60GB hard drive, and a CD-RW/DVD-ROM Combo drive. It features the same Nvidia GeForce4 MX graphics processor but has double the amount of DDR SDRAM: 64MB. Like the other two Power Mac configurations, the 1GHz model retains the Xserve-inspired architecture brought to the Power Mac line last year.

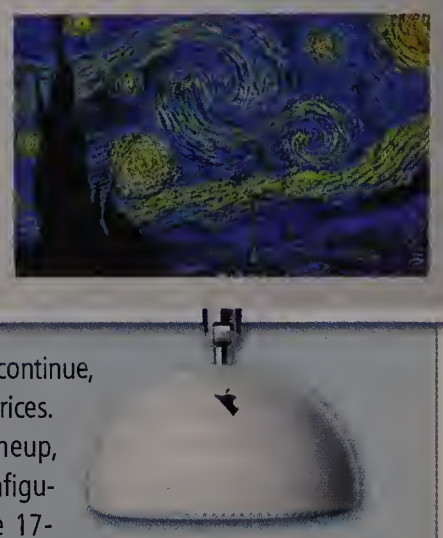
As for the dual-1.25GHz Power Mac G4, it features 1MB of L3 cache per processor, 256MB of memory, an 80GB hard drive, a Combo drive, and an ATI Radeon 9000 Pro with 64MB of DDR SDRAM. The dual-1.42GHz Power Mac comes with 2MB of L3 cache per processor and features 512MB of DDR RAM. It ships with a 120GB hard drive, the ATI Radeon 9000 graphics processor, and a DVD-burning SuperDrive that's actually faster than previous models, burning DVDs at 4×. (The Combo drives on the new models also operate faster, doubling CD-burning speeds to 32×.) Both dual-processor machines feature 167MHz system buses.

One feature has been scaled back since the previous Power Mac models were introduced last year, and it's one many customers won't miss—the noise. After users complained about the amount of noise the Power Macs generated, Boger says, "one of the things we did is we went over the system with a fine-tooth comb and reduced the acoustic levels."

The Last Word

Apple doesn't control the economy, and the company has only so much influence over when third-party developers release OS X–native versions of the applications professional Mac users require. But Apple can control the capabilities of its computers and how much it charges for them. By boosting the former while cutting the latter, Apple is placing its bets on the new Power Mac line, hoping it will attract pro users who balk at upgrading their desktop systems.—PHILIP MICHAELS

The Desktop Shuffle



Change is afoot throughout Apple's desktop product lines. Like the revamped Power Mac lineup, the flat-panel iMacs are picking up some of the wireless technologies that were recently embraced by Apple. At the same time, they're undergoing a bump in speed: the top-of-the-line machine has hit the gigahertz mark for the first time. Meanwhile, Apple's price-cutting ways continue, as both the iMac and the education-geared eMac now sport lower prices.

In perhaps the most immediately visible change to its iMac lineup, Apple has winnowed down the number of available flat-panel configurations to two. Previously, Apple offered four iMac models—the 17-inch flat-panel iMac and three 15-inch configurations, with assorted optical drive and processor options. Now, consumers can choose between the 1GHz 17-inch iMac and an 800MHz 15-inch model.

That 1GHz G4 processor is the fastest chip to ever power an iMac. Just as important, the 17-inch model features a faster, 133MHz system bus, allowing the G4 processor to work more efficiently. The amount of memory that ships with the 17-inch iMac is the same as before (256MB), only now it's DDR RAM, which sends data on both the rise and the fall of the clock signal. Like the dual-1.42GHz Power Mac G4, the 17-inch iMac features a faster SuperDrive that doubles the speed of DVD burning to 4×. Other specs—such as the 80GB hard drive and the Nvidia GeForce4 MX graphics processor—remain unchanged, though Apple has doubled the amount of dedicated video memory to 64MB.

The 17-inch iMac also includes two of the new technologies introduced to the PowerBook and Power Mac lines: AirPort Extreme wireless networking and Bluetooth wireless connectivity. (A $2,348 build-to-order option includes an AirPort Extreme card and a Bluetooth module.) The 17-inch model's two FireWire 400 ports don't support the new FireWire 800; at this time, Apple believes the technology's faster throughput is more appealing to pro users with Power Macs and PowerBooks.

The 800MHz 15-inch iMac features 256MB of memory (but not DDR RAM), a 60GB hard drive, and an Nvidia GeForce2 MX graphics card. The biggest changes are to its CD-RW/DVD-ROM Combo drive—it burns CDs at 32×—and its price, which has dropped by $200, to $1,299. The price of the 17-inch iMac has also dropped by $200, to $1,799.

Price cuts are in order for Apple's eMac offerings as well. The product line now starts at less than $1,000 for consumers, with the $999 Combo drive–equipped 700MHz eMac. The 800MHz model with a DVD-burning SuperDrive costs $1,299.—PHILIP MICHAELS

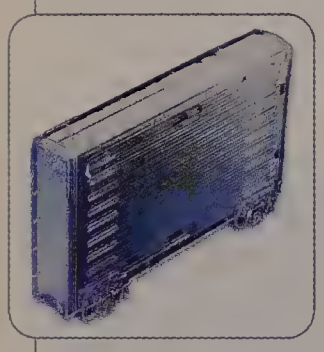
APPLE ADDS 20-INCH DISPLAY TO LCD PRODUCT LINE

Flat Panels, Falling Prices

Apple desktops aren't the only products out of Cupertino to see a steep price drop. Apple has also slashed its flat-panel–display prices. You want the 23-inch HD Cinema Display with 1,920-by-1,200-pixel resolution? It's yours for $1,999—$1,500 less than what Apple used to charge for the wide-screen LCD. The price of the 17-inch Studio Display has fallen by $300, to $699. And Apple has replaced its 22-inch flat-panel with a 20.1-inch model that, at $1,299, costs nearly half as much as its predecessor.

That 20.1-inch Apple Cinema Display is the latest addition to Apple's line of LCDs. With an optimum resolution of 1,680 by 1,050 pixels, it actually provides a larger workspace than the 22-inch display it replaces.

So why are the prices of Apple displays falling? "Leadership has its advantages," says Greg Joswiak, Apple's vice president of hardware marketing, referring to the company's push to convert its monitor offerings to flat-panel displays only. "We have been in a position where we can drive what happens. These are not just interesting technological showcases—we can drive [flat-panel LCDs] into mainstream use."—PHILIP MICHAELS



Century Global's IceCube 800

FIRST CAME APPLE'S SUPPORT—NOW FIREWIRE 800 PRODUCTS ARE ON THE WAY

Device Makers Fire Things Up

After adding a FireWire 800 port to its 17-inch PowerBook G4, Apple is now bringing the next-generation connectivity standard to its Power Mac and Xserve offerings. So when will you be able to find devices that take advantage of FireWire 800's faster throughput?

As it turns out, soon. The moment Apple introduced the technology, also known by the industry-approved moniker 1394b, third-party developers began announcing peripherals that would have FireWire 800 support. Many of those products are expected to ship this spring (see "The 800 Club"), with several due out by the time you read this.

Who Benefits

FireWire 800 doubles the bandwidth of the original standard to 800 Mbps, thanks to faster controller processors. The increased bandwidth—equivalent to the ATA/100 interface that connects drives internally—is particularly attractive to makers of both hard drives and drive enclosures. FireWire 800 should be able to produce the kind of internal read and write speeds you'd expect from an internal drive.

Inexpensive FireWire RAID arrays could also benefit from FireWire 800's bandwidth. A RAID array—a group of disks working together to increase drive performance or data safety—is typically composed of expensive SCSI devices on the Mac. FireWire 800 offers a bandwidth that approaches SCSI's, at a far lower price.

Not every peripheral will benefit from FireWire 800. External CD burners, for example, don't tax FireWire 400's bandwidth, so there's little incentive for device makers to add FireWire 800 compatibility to them.

FireWire's Future

Even so, FireWire 800's long-term prospects are bright. Look for the specification to one day include control software for Hardware Audio Video interface (also known as HAVi), which should allow consumer devices, such as stereo speakers or a television set, to connect to your Mac's FireWire 800 port. The FireWire 800 specification could also expand to give devices a certain level of intelligence for controlling other devices—such as a video camera that knows to download its video to a connected hard drive, without having to also be connected to a Mac.

As for FireWire 800's more immediate future with Apple, the company hasn't commented. But given the company's championing of the original standard and its early support for the latest version, it's a safe bet that FireWire 800 support will find its way to the rest of the Mac product line.—DAVID READ

The 800 Club

Here are some of the FireWire 800–compliant products that will be available for Mac users in spring 2003.

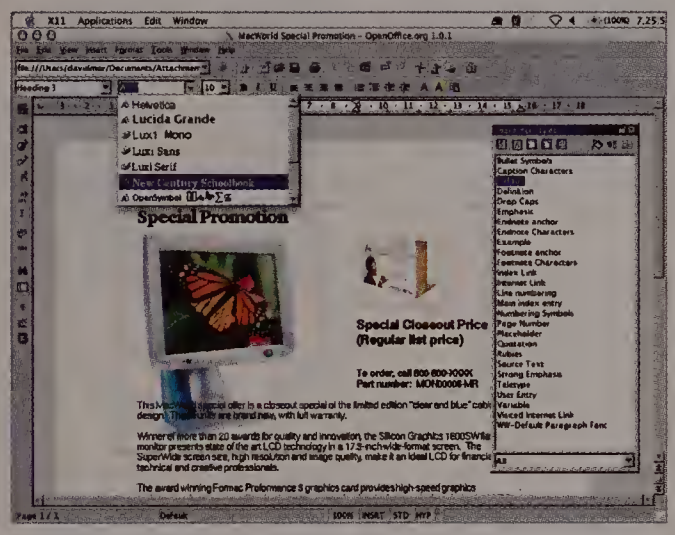
COMPANY	PRODUCT	CONTACT	TENTATIVE SHIP DATE
Belkin	FireWire 800 cables	800/223-5546, www.belkin.com	available now
Century Global	MantaRay 800, IceCube 800 hard-drive enclosures	714/572-9889, www.centuryglobal.com	March
EZQuest	external hard drive	888/898-8380, www.ezq.com	March or April
Granite Digital	RAID, cables	510/471-6442, www.scsipro.com	March or April
LaCie	d2 FireWire Hard Drive	503/844-4500, www.lacie.com	February
Macally	cables, hubs	626/338-8787, www.macally.com	no date announced
Maxtor	external hard drive	817/430-5726, www.maxtor.com	no date announced
Orange Micro	PCI cards	714/779-2772, www.orangemicro.com	April or May
SmartDisk	FirePower external hard drives	239/425-4000, www.smartdisk.com	March
Unibrain	PCI cards	925/866-3000, www.unibrain.com	March

OPENOFFICE.ORG WORKS ON FREE PRODUCTIVITY SUITE FOR OS X

Suite Now Out in the Open

It may be hard for some Mac users to imagine accomplishing everyday tasks without Microsoft's ubiquitous Office suite, but that's exactly what the OpenOffice.org Source Project (www.openoffice.org) hopes to let you do. OpenOffice.org is a suite of modules for word processing, spreadsheets, charts, presentations, and drawing. It can read and write Microsoft Office formats—and it's free.

OpenOffice.org is one of many so-called "open," or community-developed, software projects coordinated via the Internet. Once known as StarOffice, the suite was announced for the Mac in 1996 and was turned over to the open project a couple of years ago. The OS X port of OpenOffice.org involves two concurrent efforts, says Ed Peterlin, one of the project's primary volunteer programmers. In January, the group released its first phase, a "final beta" that provides functionality without OS X's Aqua interface. Instead, it uses another open project, the X Window System (or X11), which is included in the installer package. The second phase will add the Aqua interface. Without additional help, the current team could need a year or longer to release an Aqua version of the suite. And the project faces other challenges. "OpenOffice.org isn't just the OS X port, but the Solaris, Linux, FreeBSD, Irix, and Windows ports, and we have to make sure our more radical ideas and techniques when Aquafying [OpenOffice.org] will work," says programmer Dan Williams. "We can't simply code them up and dump them upon the rest of the OpenOffice.org team."—DAVID MORGENSTERN



X Factor OpenOffice.org uses the X11 interface.

USER INTERFACE COULD MAKE IT EASIER TO PORT UNIX APPS TO MACS

Apple's X Marks the Spot for X11

OpenOffice.org could soon have company on the Mac. Apple has introduced its own version of the X Window System, also called X11, a user interface that most standard Unix applications and operating systems use. This version of the windowing interface offers speedier performance and better compatibility between Mac peripherals and Unix programs.

Unlike the older Mac operating system, OS X incorporates a greater number of software layers (or modules) that separate hardware from software, promoting stability. At times, these layers are interchangeable—a capability that's led several groups to offer versions of X11 in recent years. For Unix applications, X11 provides the user interface, graphics engine, and peripheral support, giving programs their traditional Unix look-and-feel.

To improve performance, Apple's X11 takes advantage of OS X's Quartz graphics engine and hardware-based OpenGL acceleration. According to online reports, Apple's initial X11 beta performs graphics routines about 10 to 20 percent faster than other X11 versions. "Apple's new effort adds to the attractiveness of OS X as the foundation to let Unix users replace their workstations," says OpenOffice.org's Ed Peterlin. "And it may lend more legitimacy and awareness of X11 applications and Unix for the traditional Mac user."

But some Unix developers are cautious about Apple's X11: though it's based on open-source projects, it's criticized by some as a "proprietary black-box solution" to get programmers to port to the Mac.

Apple released the software as a free beta in January and expects to have a final version later this year.—DAVID MORGENSTERN

UTILITIES BEAT

Software

Backup

Data Backup X 1.0.1, by Prosoft Engineering (925/426-6100, www.prosofteng.com): The OS X backup software now includes a feature that automatically performs backups when the backup drive is attached and recognized by the Mac ($49; upgrade, free). Also from Prosoft, **Data Backup Classic** has the same features as Data Backup X—including scheduling, scripted operation, the ability to specify files that are never to be backed up, and incremental backup—but runs on OS 8.6 and higher ($49).

Intego Personal Backup 10.1, from Intego (512/637-0700, www.intego.com): The backup software runs backup scripts in the background at scheduled times. It synchronizes two volumes and works with any HFS volume. ($60; 5-user license, $180; 10-user license, $300; upgrades, pricing varies by version).

Security

NetBarrier X 10.1, from Intego (512/637-0700, www.intego.com): The Internet security utility provides a firewall with customizable rules; an antivandal component that detects incorrect passwords; a filter that analyzes outgoing data such as credit card numbers; and an Internet-privacy feature for ad blocking, spam filtering, and control over cookies. NetBarrier X 10.1 includes OS 8 and OS 9 versions (single-user license, $60; upgrades, $50 from version 1.X, $40 from version 2.X; multiuser licenses also available). Also from Intego, **ContentBarrier X 10.0** is the OS X–compatible version of the parental-control software. Predefined categories let parents choose what Internet content they want to block from their children; the utility also keeps a log of all Web sites visited and can limit the times of day children have access to the Web (single-user license, $60; upgrade, $40).

SuperScrubber, from Jiiva (503/520-9500, www.superscrubber.com): The disk-erasing software, for use on drives that need to be erased completely for recycling or reuse, works on IDE (ATA), SCSI, USB, and FireWire drives. It also features an option for military-grade disk sanitization ($30).

System

F10 Launch Studio, from Chronos (435/615-7335, www.chronosnet.com): The Dock-replacement utility consists of a semitransparent panel that appears over the entire screen, with large icons for selected applications and documents. Users can launch an application by clicking on the appropriate icon, causing the panel to disappear. During setup, the program's Auto-Discovery feature intelligently searches the hard disk for applications and assigns them to predetermined categories ($30).—COMPILED BY JENNIFER BERGER

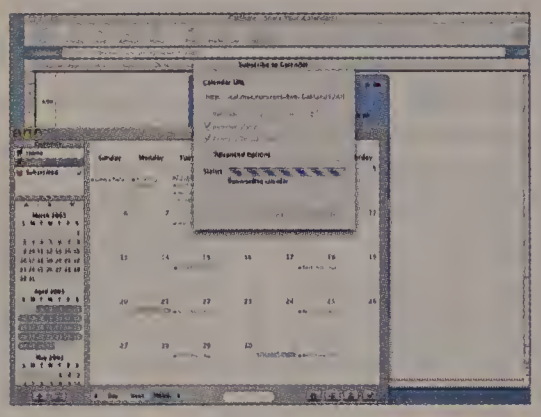
SITES SPRING UP FOR SHARING iCAL CALENDAR INFORMATION

Share and Share Alike

The ability to publish calendars online via Apple's .Mac service sets Apple's iCal apart from other calendar applications—unless, of course, you don't have a .Mac account (see "Apple's Information Hub," December 2002). Still, you don't have to be shut out of calendar sharing, thanks to a slew of Web sites that offer WebDAV hosting of iCal calendars.

iCal Exchange (www.icalexchange.com) Carlos Pero's iCal Exchange provides free storage of both public and private calendars; you can assign individual passwords for each private calendar you publish. iCal Exchange also allows you (and others) to view calendars via a Web browser.

iCal World (www.icalworld.com) Ken Moulton's iCal World is a complete iCal-hosting solution. It offers free hosting of publicly available calendars and a $25-per-year SecureCal option to publish secure calendars viewable by as many as 30 users. iCal World includes a wide variety of public calendars.



Mystery Date iCalShare lets you access hundreds of calendars in dozens of categories.

MyiCal (www.myical.com) goBlox Technologies' MyiCal lets you view calendars in a Web browser. However, the service does not provide a pool of publicly available calendars or let you create secure calendars.

iCalShare (www.icalshare.com) iCalShare, from Patrick Crowley, is a free repository for calendars published elsewhere on the Web—on a .Mac account or a WebDAV server such as MyiCal, iCal Exchange, or iCalWorld. At press time, iCalShare included entries for 995 calendars in 29 categories, including sporting events, movie releases, TV listings, and holidays.—CHRISTOPHER BREEN

AVID FREE DV TO CHALLENGE APPLE'S FINAL CUT EXPRESS

Avid's Editing Free-for-All

Avid (800/949-2843, www.avid.com) may be the leader in the professional digital-video–editing field, but that doesn't mean the company isn't feeling pressure. On the day Apple released Final Cut Express, Avid announced a slimmed-down, low-cost version of its flagship editing application—but its software will be available for free.

Avid Free DV won't match the power of Avid Xpress DV, the professional editing program brought to Mac OS X last year, but it will give digital-video enthusiasts a taste of what it's like to edit with an Avid product. Free DV limits users to only two video tracks, four audio tracks, and as many as two streams of real-time video. Avid hopes that users will prefer Free DV's workflow and interface, which are practically identical across Avid's product line, and that the free program will serve as a stepping stone to its professional products.

Though Avid hasn't announced a firm date for Avid Free DV's release, you can expect this OS X–native product to ship before the end of June.—ANTON LINECKER

PRO FILE | Q&A WITH ROB BURGESS

MX IN THE MIX

The March release of Macromedia MX caps a busy year for Macromedia, which has now rolled out new versions of all its marquee products. But the company considers these releases to be more than just simple updates. Bearing the MX label, these programs are part of Macromedia's strategy for releasing integrated tools that make it easier to create rich content and Internet-based applications on the Web. Rob Burgess, the company's chairman and CEO, recently spoke with *Macworld* about how the MX initiative unveiled in 2002 will affect what Macromedia does in 2003 and beyond.—ANDREW SHALAT

AT A GLANCE

ROB BURGESS
Chairman and CEO, Macromedia
MAC: 800MHz Titanium PowerBook G4, 800MHz flat-panel iMac
SOFTWARE: Karelia Software's Watson

How do the MX versions of Macromedia's products fit in with the company's overall strategy?

We have a vision at Macromedia that is all about taking the next major step in terms of the experience on the Internet. The first product started back [in March 2002] with Flash MX; then the bulk of the products came out in the summer, as Studio MX. Now we've just added Director MX for the Mac. So this is really the start of the next generation of tools, the next generation of technology, all oriented around providing a much better Internet experience than you have been able to do before. . . . You have not only client-side technology but also server-side technology. Marrying these is another key component to this better experience. One of the implementations of this next-generation experience that we're talking about is called rich Internet applications—the merging of content and application so that you're able to create experiences that are more like desktop experiences, that are responsive, that have logic running locally and a much better user interface, and that take advantage of the benefits of the Internet, like database access and distribution.

What does MX stand for?

Nothing. It's designed to articulate that this is not just another point release, but that this is a family of products that is a next generation of products.

Aside from product announcements, how long has the MX strategy been in place?

The MX strategy, the thing we call MX now, was the driving force for our acquisition of Allaire [in 2001]. In fact, we have been talking about this with Allaire for many years, so when we pulled the trigger on that acquisition, that was the beginning.

More Info:

www.macworld.com/2003/04/macbeat/burgess
Rob Burgess talks about Macromedia's latest release, Contribute, which should be available for the Mac this year.

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PRODUCTIVITY BEAT

Software

Creative Reference

MasterWriter 1.0, from MasterWriter (866/848-8484, www.masterwriter.com): The songwriting program includes reference, rhyming, and phrase dictionaries, an organizational database, a melody recorder, and a MIDI drum-loop library. The application also includes Songguard, an online date-of-creation registration service for songwriters ($289).

Fax

Cocoa eFax 1.0.3, from Ben Mackin (www.macadvocacy.com/cocoaefax.htm): The OS X faxing shareware lets users send faxes from their Mac via an internal or external modem. The software also receives faxes, saving them as TIFF documents ($10).

Announced

Exchange Server support for OS X from Microsoft (800/426-9400, www.microsoft.com): The support, which will let users share calendars and manage personal information in mixed PC and Mac networks, will come via a free update to **Entourage X**. Expect this update in summer 2003.—COMPILED BY PHILIP MICHAELS

CREATIVE BEAT

Software

Asset Management

Portfolio 6.1, from Extensis (800/796-9798, www.extensis.com): The update to the digital-asset–management program adds OS X compatibility. The update, which requires Jaguar, also includes a redesigned user interface ($200; upgrade, free).

Illustration

FreeHand MX, from Macromedia (800/470-7211, www.macromedia.com): The update brings the Macromedia Studio MX standard interface to the illustration software. FreeHand MX also features a number of new tools and an improved workflow ($399; upgrades, $149 from FreeHand 9, $99 from FreeHand 10 and Studio MX).

Publishing

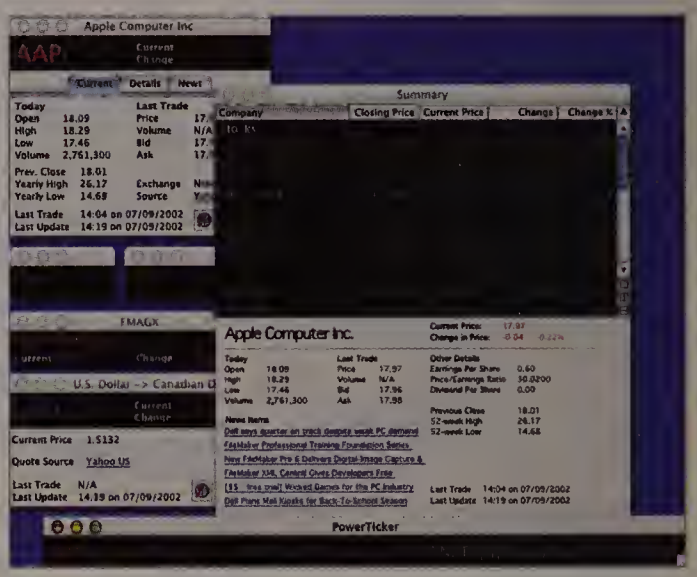
InDesign to QuarkXPress, from Markzware (800/300-3532, www.markzware.com): The QuarkXPress XTension converts Adobe InDesign files to QuarkXPress files. The XTension converts original Mac or Windows files generated by InDesign version 1.5 and 2.0 ($199).—COMPILED BY TERRI STONE

FINANCIAL TOOLS CAN HELP MAC INVESTORS LEVEL THE ONLINE PLAYING FIELD

Selling Mac Users Short

Online grocers may have made their final deliveries, and sock puppets may no longer be hawking pet food available online, but Web-based financial sites remain a viable service on the Internet—especially when it comes to buying and selling stocks. The Web brings research, analysis, financial statements, streaming stock tickers, and instant trading capabilities onto your desktop, making it possible to buy and sell stocks right from your computer.

Unfortunately, while online trading services such as AmeriTrade (www.ameritrade.com), E-Trade (www.etrade.com), and Schwab's CyberTrader (www.cybertrader.com) continue to create feature-rich tools for Windows users, Mac users have been getting short-changed. "The biggest problem I've found," reader Stephen Lyttleton told *Macworld*, "is that when I find a firm that offers the online tools I want, I'm stuck because I use a Mac."



Ticker-Tape Parade PowerTicker, from Galleon Software, gives Mac users stock-market information—but it's 15 to 20 minutes behind real time.

Outsider Trading

That's not to say it's impossible for Mac users to trade stocks via the Web. In fact, pretty much anyone on any platform can log on to dozens of online brokerages, set up an account, and trade stocks. But when it comes to tools for power traders—such as customizable, streaming consoles that allow you to track stocks in real time—there's little parity between services for Mac users and those for Windows users.

In most cases, the tools are available only as Windows executable files. But even browser-based Java applications—supposedly the great equalizers of the Web—don't work correctly when running on a Mac, leaving Mac users with only the most-basic Web-trading offerings.

Leveraging the System

Fortunately, Mac users aren't entirely without options for monitoring market data in real time, thanks to some third-party products that can be used in conjunction with trading services.

Traders willing to live with data that's running about 15 to 20 minutes behind the market can use PowerTicker, from Galleon Software (416/304-1325, www.galleon.com). The $50 program, which works in Mac OS 8.1 through OS X, offers portfolio management, the latest market news for each stock, and a free-floating stock ticker. For investors with more-pressing needs, two programs offer sophisticated market-analysis tools and real-time streaming data: Linn Software's Investor/RT (800/546-6842, www.linnsoft.com), which runs on OS 8.6 through OS X, and Trendsetter Software's Pro Analyst (800/825-1852, www.trendsoft.com), which runs in OS X's Classic mode. Both applications require subscriptions to real-time market-data services, but they also meet or exceed the capabilities online brokerage services provide Windows users. Investor/RT pricing starts at $49 for a trial package, with quarterly and annual subscriptions available for $195 and $595, respectively. Pro Analyst costs $59 a month.

And if all else fails, you can always turn to the recently updated Virtual PC 6, from Connectix (see our review, page 43)—an option that several online brokerages suggest. Prices range from $129 to $249, depending on which bundle you choose. Although the Windows-emulation software may not be the perfect solution, it beats selling off your Mac and trading down to a Windows PC.—JEFFERY BATTERSBY

RENDEZVOUS BRINGS MACS AND TIVO DIGITAL VIDEO RECORDER TOGETHER

A Digital-Hub Connection

With all of Apple's digital-hub talk, one appliance that sits in most homes really hasn't been part of the discussion: the TV set. But that's changing—a partnership between Apple and digital-video–recorder (DVR) manufacturer TiVo (408/519-9100, www.tivo.com) will make Macs and TiVo DVRs work together.

Networked TV Thanks to Rendezvous, you'll be able to browse iPhoto images on your TV via a TiVo.

TiVo's new Home Media Option, a $99 service package you can add to any TiVo Series 2 stand-alone DVR, turns your TiVo DVR—presumably one that's hooked up to a large TV set and a nice audio system—into a photo viewer and MP3 player.

If you're running iTunes, a TiVo DVR connected to your home network will automatically detect your MP3 collection via Rendezvous—Apple's new networking technology that lets networked devices discover each other without having to be specially configured. Some TiVo-developed software running on your Mac will let your TiVo browse through your iTunes library and playlists, letting you stream music over the network to your TiVo.

TiVo is also developing separate Mac software that will enable the Photos feature of TiVo's Home Media Option software to browse photos stored on your Mac and even display slide shows on your TV. The photo-sharing system works by letting your Mac, which has a much more powerful processor than the one inside the Linux-based TiVo box, generate thumbnails and scale photos before sending them across your network to the TiVo. More integration could be added in the future. Until then, the partnership at least proves that the TV *is* part of the digital hub.—JASON SNELL

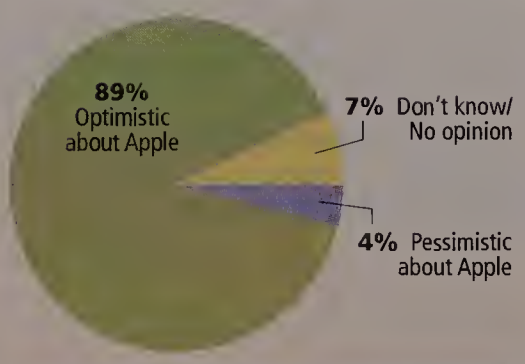
THE READERS SPEAK: 2003 IS LOOKING BRIGHT AFTER JANUARY'S MACWORLD EXPO

Is the Time Ripe for Apple?

The tech industry may be mired in an ongoing funk, but Mac users—at least the ones in the Macworld Reader Panel—are looking forward to what's in store for Apple.

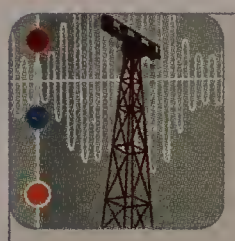
Our panelists—1,214 *Macworld* readers selected at random by market-research firm Karlin Associates—were asked to describe their feelings about Apple's prospects for 2003, following the company's product announcements at January's Macworld Conference & Expo. Nearly 9 out of 10—89 percent—said they felt optimistic about Apple's future. Less than 5 percent expressed pessimism about the year ahead. Of course, after an event that featured the unveiling of two new PowerBooks, the Safari Web browser and Keynote presentation software, Final Cut Express, and the iLife application bundle, it's easy to see why Mac users think the future is bright.—MACWORLD STAFF

CONSIDERING APPLE'S MACWORLD EXPO PRODUCT ANNOUNCEMENTS, HOW DO YOU FEEL ABOUT THE COMPANY'S PROSPECTS FOR 2003?



More Info:

www.macworld.com/2003/04/macbeat/poll/
Find out what the Macworld Reader Panel thought about each of Apple's Macworld Conference & Expo product announcements, at Macworld.com.



NETWORKING BEAT

Hardware

Adapters

A Bluetooth adapter from Keyspan (510/222-0131, www.keyspan.com): The **USB Bluetooth Adapter** ($59) plugs into a USB port on any Mac running OS X 10.1.4 and later.

Software

Connectivity

iPass Connect 2.3 for OS X, from iPass (650/232-4100, www.ipass.com): The remote connectivity client, which lets mobile users securely connect to corporate networks, has been updated to run natively in OS X (pricing varies).

File Transfer

Interarchy 6.1.1, from Stairways Software (510/601-5244, www.interarchy.com): The update to the file-transfer application adds support for Rendezvous, the zero-configuration technology in Jaguar. Version 6.1 lets users discover and connect to local servers to transfer files automatically (single-user license, $45; upgrade, free to registered version 6.0 users).—COMPILED BY PHILIP MICHAELS

STORAGE BEAT

Hardware

Hard Drives

Two new portable drives from WiebeTech (316/744-8722, www.wiebetech.com): The **UltraGB** is a FireWire 400 and USB 2.0 drive that comes in two capacities: 80GB ($340) and 120GB ($380). The **DesktopGB+** ships in an aluminum, fanless enclosure and comes in four different capacities: 80GB ($220), 120GB ($280), 180GB ($370), and 200GB ($430)—all use 7,200-rpm drives.

Media Readers

A new USB digital media reader from Keyspan (510/222-0131, www.keyspan.com): The **7-Way Media Reader** ($49) lets owners of USB-equipped Macs read and write to all major types of digital media cards including CompactFlash I and II, Memory Stick, SmartMedia, SD and MultiMedia cards. The new device requires no external power supply and supports OS 8.6 and higher, including OS X.

Software

Data Storage

Serial Storage 2.5, from ArcaneWare (www.arcaneware.com): The OS X program for storing serial numbers, credit card info, passwords, and other data adds 448-bit encryption ($10; upgrade, free).—COMPILED BY JAMES GALBRAITH

WHAT'S HOT

A Quick Look at the World of Macs

1. **AOL Time Warner reports it lost $99 billion last year.** *In a cost-cutting move, the AOL client's "You've Got Mail" greeting will be changed to "Get Your Own Damn Mail."*

2. **Apple says the newest Power Macs are quieter than the last round of updates.** *Unfortunately, Apple's new Cinema Display can't be viewed without welder's glasses.*

3. **Apple cuts prices across its monitor product line, including a $1,500 price cut for its HD Cinema Display.** *Mysteriously, Apple expects shipping costs for the display to increase by roughly $1,500.*

4. **Several Mac resellers sue Apple, claiming that the company gives its own retail stores preferential treatment.** *"We don't understand," Apple executives say. "We always make sure our resellers have enough Newtons, Quadras, and System 7 diskettes."*

Mac OS X Updates

powered by versiontracker.com

Adobe After Effects 5.5.1
Now supports 2GB of RAM on Macs

Adobe Photoshop 7.0.X AltiVec Core Update
Plug-in to enhance reliability

Change Startup Disk 1.5
Bypasses system preferences to shift between OS 9 and OS X

ChimeraKnight 1.9.4
Automatic download tool for Chimera nightly builds

Direct Connect 1.1.0
Peer-to-peer file-sharing system

DVD Capture 2.0
Screen capture from DVD-player window

Excalibur 4.0.2
LaTeX-aware spelling checker

EyeTV 1.1.1
Adds full-screen playback compatibility with QuickTime 6.1

FastTrack Schedule 8.0.3
XML addition to project-scheduling software

Gimp-Print 4.2.5
Printer drivers for Epson, HP, Canon, and Lexmark

GraphicConverter X 4.5.3
Utility for viewing and converting graphic file formats

iFoundU 1.0
Geographically finds IP addresses

iSMS 1.9
Sends SMS messages, forwards iCal reminders to cell phones

Microsoft Office v. X 10.1.3
Update for the productivity suite

Omni Outliner 2.2 beta 1
Outliner and organizer

PDF Browser Plugin 1.0
Displays PDF documents in Web browsers

PopChar X 2.0.1
Types unusual characters without keyboard combos

Safari Debugger 1.0
Fixes errors with online-banking and other Web sites

Safari Enhancer 1.2b
Activates Safari hidden features

Safaricon 1.1.2
Visual theme editor for Safari interface

SafariCookieCutter 1.0
Cookie editor for Safari

Safari Scriptpak 1.0
AppleScript enhancements for Safari

SharePoints 3.0
Preference pane to share any directory

Smile X 2.5.2
AppleScript editor and development environment

Stone Studio 2003-01-22
Updates for design-tools suite

Timbuktu 6.0.3
Fixes issue with remote-control tool's Host Relauncher

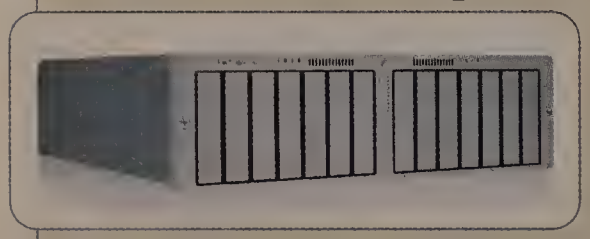
Xbench 1.0
Benchmarking utility

YourSQL 1.0.1
Simple client for MySQL

For these and other current updates, visit:
www.macworld.com/subject/updates
Macworld.com has the latest from VersionTracker.com.

APPLE UNVEILS XSERVE RAID, UPDATES SERVER HARDWARE

RAID Storage at Your Service



Apple hopes that Mac users who need massive, high-speed storage will find its Xserve RAID worth the wait. Originally slated for a late-2002 release, the storage companion to Apple's server hardware can hold as many as 14 independent ATA/100 drive channels with a total maximum capacity of 2.5 terabytes. Each 180GB hard drive uses a dedicated drive channel, maximizing the 400 MBps Fibre Channel host connection. Xserve RAID comes in three configurations: a $5,999 model with four Apple Drive Modules, a $7,499 seven-drive model, and a $10,999 14-drive model. A dual-channel 2GB Apple Fibre Channel PCI Card (sold separately for $499) lets you connect the Xserve RAID storage system to Apple's Xserve, which has undergone an update: the rack-mountable server now comes with either one or two 1.33GHz G4 processors, with 2MB of L3 cache per processor. The $2,799 single-processor Xserve ships with 256MB of DDR RAM running at 333MHz, while the $3,799 dual-processor model comes with 512MB of memory. Both configurations ship with a 60GB ATA hard drive, two PCI slots and a PCI/AGP slot, as much as 720GB of storage capacity, dual Gigabit Ethernet ports, and FireWire 800 interfaces.—JIM DALRYMPLE

IMAGING BEAT

Hardware

Digital Cameras

Six new cameras from Canon (800/652-2666, www.powershot.com): The **PowerShot S400 Digital Elph** ($449) is the first 4-megapixel model in Canon's compact Digital Elph line. Sporting an all-metal body, the camera features a 3× optical zoom lens, an enhanced movie mode that can record as many as 3 minutes of sound, and improved close-focus support. The **PowerShot S50** ($599) is Canon's first 5-megapixel consumer camera. Modeled after Canon's S30 and S45 cameras, the S50 has a 3× optical zoom, a 3-minute movie mode, and an automatic image-rotation feature for pictures shot in portrait mode. The **PowerShot A60** ($249) and **PowerShot A70** ($299) are 2- and 3.2-megapixel versions of the same camera, designed for cost-conscious buyers who want automatic and manual shooting controls and a 3× zoom lens. The **PowerShot A300** ($199) is a 3.2-megapixel digital camera with a fixed 33mm lens. The A60, A70, and A300 have the same 3-minute movie mode and automatic image-rotation feature as the PowerShot S50. The **EOS 10D** ($1,499), which replaces the EOS D60, is a 6.3-megapixel camera that uses interchangeable lenses designed for Canon's EOS line of film and digital SLR (single-lens reflex) cameras. The 10D has 7-point autofocus controls for quicker focusing, especially in low light situations, and can shoot at 3 frames per second for as many as 9 consecutive frames.

Scanners

Two scanners from Epson (800/463-7766, www.epson.com): The **Perfection 3200 Photo** ($399) and **Perfection 3200 Pro** ($599) have resolutions of 3,200 by 6,400 dpi, 48-bit color depth, and FireWire and USB 2.0 compatibility. Both models include a transparency unit for scanning 35mm slides, negatives, and 4-by-5-inch transparencies. The Pro scanner also ships with reflective and transmissive IT8 targets for color matching both film and photos.

A flatbed scanner from Microtek (310/687-5800, www.microtek.com): The **ScanMaker 6800** ($400) is a 2,400-by-1,800-dpi scanner with Applied Science Fiction's Digital ICE photo-correction technology. The 48-bit scanner includes a 4-by-5-inch transparency light plate in addition to its 8.5-by-11.7-inch plate.

Software

Image Editing

MacBibble 3.0, from Bibble Labs (512/345-3480, www.bibblelabs.com): The digital-photo–manipulation software converts RAW uncompressed images from many digital SLR cameras into formats readable by Adobe Photoshop and other image editors. Version 3.0 has been updated to be fully multithreaded and optimized for AltiVec, resulting in faster-image conversion work. The software also adds support for newer Nikon, Fuji, Olympus, and Kodak SLRs ($99).—COMPILED BY RICK LEPAGE AND TERRI STONE

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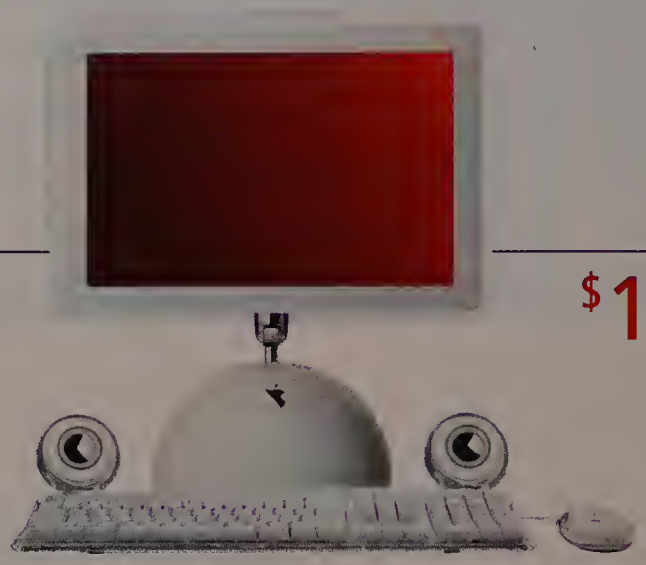

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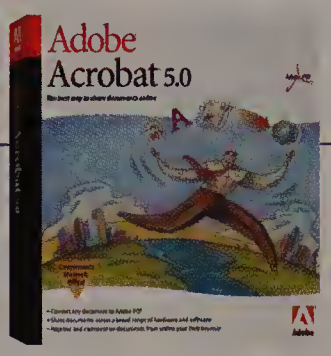

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867MHZ 12-INCH POWERBOOK G4

Compact Notebook Compromises on Pro Features but Offers Great Portability

BY JASON SNELL

Mac users who need a powerful portable computer haven't exactly had a lot of choices lately. There's the light and small iBook, which, with its G3 processor, doesn't come close to the G4 might of its professional-level kin—though it is the lowest-priced Mac laptop. At the high end of the line, the popular, very powerful Titanium PowerBook G4 has been the only option for anyone who needs a G4 processor in a computer that weighs less than 21 pounds—but it can be awkward to carry.

Effectively bridging the gap between the PowerBook and iBook lines, the new 12-inch PowerBook G4—the first Mac to boot only into OS X—is a remarkably diminutive laptop that packs more of a punch than the iBook but not quite as much power as the Titanium.

Judge by Its Cover

This silver PowerBook G4 is sturdily constructed—not of titanium but of anodized aluminum. The result is a laptop that feels quite rugged; its case, although far from impervious to scuffs, is certainly more resistant to scratches than the Titanium PowerBook's coating of metallic paint. The material is rigid, too—pressing the back of this PowerBook's flat-panel display while the PowerBook was open made no visible marks on the display itself, whereas it's quite easy to make waves by touching the back of the Titanium model's screen. The new aluminum shell also has a slightly raised texture that is a bit more comfortable to hold than the Titanium's smooth surface.

Aluminum is also a good heat conductor—and this PowerBook can get very warm, especially the underside area to the left of the trackpad. We measured temperatures there as high as 102 degrees Fahrenheit—not hot enough to cause damage, but warm enough to notice as we were using the machine. We didn't hear the cooling fan go on very often, but when it did, it was pretty quiet—all told, the 12-inch PowerBook is much quieter than the Titanium.

This PowerBook measures only 1.18 inches thick, 10.9 inches wide, and 8.6 inches deep—it's the smallest PowerBook ever in terms of volume. It's also quite light; at only 4.6 pounds, it's easy to carry, open or closed, with one hand—a level of casual portability that only the slightly larger iBook can match among Mac laptops.

Like the iBook's keyboard, this PowerBook's keyboard spans the computer's entire width—but it's a full-sized keyboard of higher quality than the keyboards Apple has been using on laptops lately. Unlike those of most recent models, this PowerBook's keyboard is not designed to flip up when you want to install RAM or an AirPort card—likely as a result, the keyboard feels less spongy when typing, and its keys seem to have a larger range of motion. The keys also didn't leave gridlike marks on the display during our testing period, even after more than two weeks of use—a problem with the iBook and previous PowerBook models.

With the keyboard now firmly seated, users who want to upgrade this PowerBook's RAM will need to do so through a rectangular door on the bottom of the PowerBook. To install an AirPort Extreme card, you flip open a small door cleverly hidden in the PowerBook's battery bay and slide it in. (In our cursory testing, this PowerBook's AirPort reception appeared to be better than the Titanium's but not as good as the iBook's.)

The ability to take advantage of Bluetooth wireless technology, which allows you to use the PowerBook to communicate with other devices over short distances, is built in. We quickly and easily connected the PowerBook to both a Sony Ericsson T68i cellular phone and a Palm Tungsten T handheld.

Missing Link

There are always compromises in small laptops, and in fitting the 12-inch PowerBook into its laptop line—between the consumer-focused iBooks and the heavy-duty Titanium and new, 17-inch PowerBooks—Apple had to make some tough decisions. As a result, this PowerBook doesn't have Level 3 cache, support for ADC or DVI monitors, highly expandable RAM slots, or a PC Card slot.

This PowerBook closely resembles the iBook in two

12-Inch PowerBook G4 Provides Solid Middle Ground

Macworld LAB TEST

	Speedmark 3.2	Adobe Photoshop 7.0.1	iMovie 2.1.2	iTunes 3	Quake III v1.30b5	Cinema 4D XL 7.303
	OVERALL SCORE	SUITE	RENDER	MP3 ENCODE	FRAME RATE	3-D RENDER
12-Inch PowerBook G4/867MHz	114	1:04	0:55	0:54	53.9	8:41
15-Inch Titanium PowerBook G4/1GHz	143	0:53	0:43	0:43	75.5	7:02
15-Inch Titanium PowerBook G4/867MHz	124	1:00	0:51	0:49	65.4	8:03
iBook G3/800MHz	*74*	*3:15*	*1:59*	*2:32*	*36.5*	*16:25*
	>Better	<Better	<Better	<Better	>Better	<Better

BEST RESULTS IN **BOLD**. REFERENCE SYSTEM IN *ITALICS*.

Speedmark 3.2 scores are relative to those of a 700MHz eMac, which is assigned a score of 100. Adobe Photoshop, iMovie, and iTunes scores are in minutes:seconds. Quake scores are in frames per second. We tested each system with Mac OS X 10.2.3 and 256MB of RAM installed. We set displays to native resolutions and 24-bit color. For the Photoshop Suite test, the systems were upgraded to 512MB of RAM; the suite is a set of ten scripted tasks using a 50MB file. Photoshop's memory was set to 100 percent and History was set to Minimum. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, converting it from the hard drive using iTunes' Better Quality setting. We tested Quake III at a resolution of 1,024 by 768 pixels with Graphics set to Normal. For more information on Speedmark 3.2, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY JAMES GALBRAITH

PHOTO COURTESY OF APPLE

32 Portable system
867MHz 12-inch PowerBook G4

34 Accounting software
QuickBooks Pro 5.0

35 Presentation program
Keynote 1.0

37 Architectural CAD software
ArchiCAD 8

38 File-security utility
PGP Personal 8.0

39 Network-management program
InterMapper X 4.0

40 Software-development program
SuperCard 4.0

41 Preflighting service
PrintReady

43 PC-emulation software
Virtual PC 6

44 TV-capture system
Formac Studio DV/TV

45 After Effects plug-in set
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46 Network-connection utility
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Canon PowerShot S45, Nikon Coolpix 3500, Olympus C-50 Zoom, Olympus C-5050 Zoom

OUTSTANDING: ●●●●● VERY GOOD: ●●●● GOOD: ●●● FLAWED: ●● UNACCEPTABLE: ●

respects: its hinged display (which pivots to sit slightly below the back of the keyboard when opened), and the array of ports on its left side (from right to left: Kensington security slot, audio-out jack, audio-in port, mini-VGA port, two USB ports, one FireWire 400 port, 10/100BaseT Ethernet port, and 56K modem). Beyond the aluminum sheen and new keyboard, the major external differences between the iBook and PowerBook are its audio-in port; stereo speakers, which are on the back of the PowerBook, behind the keyboard and positioned to reflect off of the screen (there's also a third speaker designed to boost midrange sounds); and a slot-loading optical drive on the right side. The drive is a CD-R/DVD Combo drive, but for $200 more, you can get this model with a DVD-burning SuperDrive.

The trait that firmly places this model in the professional realm is its G4 processor. Running at 867MHz, it's able to take advantage of Apple's Velocity Engine technology to accelerate certain data-intensive tasks. But unlike the rest of the PowerBook line, which uses 1MB of Level 3 cache to speed up data-intensive tasks in applications such as Adobe Photoshop and Apple's Final Cut Pro, this model's processor has no Level 3 cache.

The 12-inch PowerBook is also somewhat limited when it comes to RAM. In addition to its 128MB of built-in RAM, it can hold only a single PC2100 memory module. Currently, those modules reach only 512MB in size, limiting this PowerBook to 640MB of RAM. That might sound like a lot, but many people will find themselves wanting more, especially those who run many applications at once.

Like the other PowerBooks, this model includes Double Data Rate (DDR) RAM, which allows data to be transferred into memory faster. Its 133MHz system bus is the same speed as the Titanium's.

In terms of speed, the 12-inch PowerBook is remarkably faster than the 800MHz iBook. But all around, it's a bit slower than a Titanium PowerBook G4 powered by the same 867MHz G4 processor, most likely due to the 12-inch PowerBook's lack of Level 3 cache (see "12-Inch PowerBook G4 Provides Solid Middle Ground").

On Display

This model's fine 12-inch display, with a native resolution of 1,024 by 768 pixels, is bright and readable, but some people may find the pixels a bit too small for their comfort. You can attach external video displays via a mini-VGA connector; Apple includes adapters in the box, so you can connect directly to VGA monitors and projectors, as well as to composite devices, via either RCA or S-Video cables.

Like the other PowerBooks, the 12-inch model supports a dual-display mode, so you can attach a monitor with a resolution as high as 1,600 by 1,200 pixels, in addition to the PowerBook's built-in display. It also supports video mirroring, albeit at lower resolutions. The PowerBook can even drive an external monitor while its lid is closed, although we experienced occasional performance slowdowns when we tried this.

Unfortunately, Apple's choice of a mini-VGA connector means that this is the only PowerBook you can't connect to Apple's ADC flat-panel displays (or any digital display, for that matter)—at least, not without a pricey add-on such as the $299 Gefen ex-tend-it VGA-to-ADC conversion box. This doesn't make sense, given that a laptop with such a small screen cries out for an external monitor.

Another video limitation is in the included graphics chip, the Nvidia GeForce4 420 Go, which comes with 32MB of video memory. Although this chip does a fine job of driving the PowerBook's display and even an external one, its general performance isn't as good as the ATI Mobility Radeon 9000 chip found in the Titanium PowerBook. As a result of the lower-quality video card, the 12-inch PowerBook fared much worse in our standard Quake test than it did in other tests. People who want a laptop that's also a solid game-playing machine should think twice before choosing the 12-inch PowerBook.

Macworld's Buying Advice

With the release of the new 12- and 17-inch PowerBook G4s, Apple is providing more options than ever for portable users. The 12-inch PowerBook G4 is not as full-featured as either its massive 17-inch sibling or the Titanium—nor is it meant to be. At $1,799—$500 less than the 867MHz Titanium and $500 more than the 12-inch 800MHz iBook—it effectively straddles the PowerBook and iBook product lines.

Users who care more about performance than about size (or who need to drive a digital flat-panel monitor or install a full gigabyte of RAM) will likely prefer the 15-inch Titanium or 17-inch PowerBook (which will be reviewed in an upcoming issue) to this portable. On the other hand, the 12-inch PowerBook will answer the prayers of mobile professionals who need a small, light laptop. □

RATING: ●●●●

PROS: Small and light; solid keyboard; dual-display support; reasonably fast.

CONS: Lack of L3 cache slows down data-intensive tasks; limited RAM expansion; no digital monitor support; video chip weak for gaming.

PRICE: with Combo drive, $1,799; with SuperDrive, $1,999

OS COMPATIBILITY: Mac OS X

COMPANY: Apple Computer, 800/538-9696, www.apple.com

QUICKBOOKS PRO 5.0

Rerelease of Accounting App in Mac Business Market Offers Small Change for Big Bucks

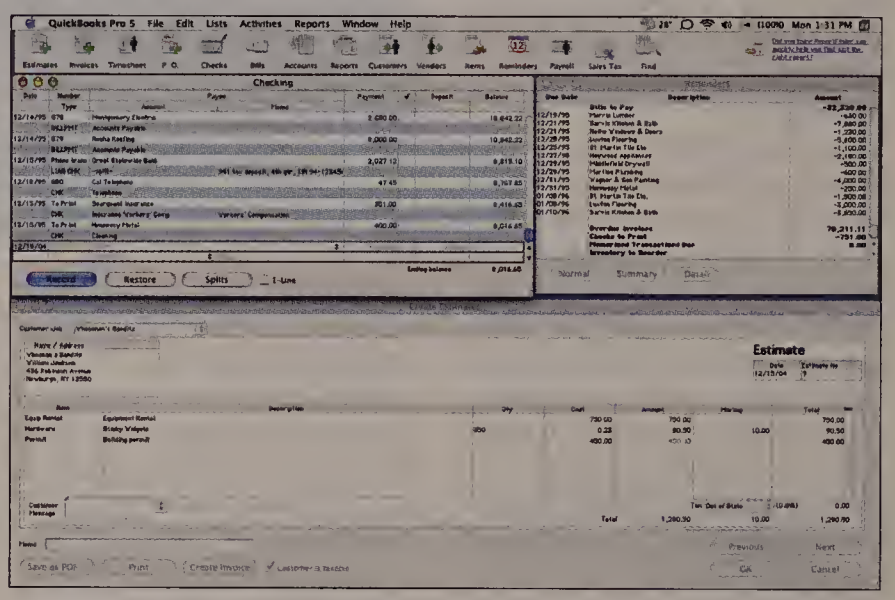
BY JEFFERY BATTERSBY

When Intuit dropped support for the Mac version of QuickBooks in 1997, it was the best-selling accounting software available for the Macintosh. Hailed for its ease of use and powerful accounting capabilities, QuickBooks allowed even neophytes to get a grip on their business finances without having to bone up on double-entry bookkeeping. QuickBooks Pro 5.0—which marks Intuit's welcome return to the Mac side of the business market—is, unfortunately, a lackluster release. While the program remains easy to master, this version has a hefty price for what is more OS X makeover than new application. What should have been the triumphant re-entry of a once-stellar application is instead a disappointing return.

Arrested Development

Anyone familiar with QuickBooks Pro 4 will be quick to note that there's little difference, featurewise, between the six-year-old version and the most recent release. QuickBooks Pro 5 is essentially an OS X–native QuickBooks Pro 4 with a splash of Aqua paint and a couple of minor additional features. QuickBooks does retain the familiar register interface it shares with Intuit's personal-finance program, Quicken. And though version 5 will run in OS 9, it differs so little from version 4 that there's no compelling reason to switch unless OS X is clearly in your immediate future.

If you're a new user, QuickBooks 5 runs you through a setup process that, depending on how much financial information you have on your business, should take you roughly 30 minutes to complete. Once you tell QuickBooks what kind of business you run—be it hair salon or auto-body shop—the setup process is customized to suit your specific business needs. For example, if you're a writer and you sell your own books, QuickBooks will help you set up inventory items, but it will also inform you that writers don't typically maintain inventory. During this process, you'll enter detailed information about your company, including the type of federal taxes you file, current bank balances, inventory, and specifics about open customer invoices.



QuickBooks Pro 4: The Resurrection Aside from the new Aqua interface, QuickBooks Pro 5.0 is not much different from version 4.

QuickBooks also provides electronic documentation, in the form of a PDF file called QuickBooks and Your Industry, which outlines useful financial information tailored to your type of business.

If you're upgrading from QuickBooks 4, simply open your data file, and the new version will automatically convert it. But before you upgrade, make sure you're using QuickBooks Pro 4 revision M12a: QuickBooks 5 will open only data files created with that version (and it will not convert data files from other accounting programs).

Once you complete the setup process, QuickBooks 5 makes entering all of your business transactions easy. A customizable button bar at the top of the screen lets you create estimates, invoices, and purchase orders, as well as gain access to QuickBooks' other major features, such as reports and lists of your accounts, clients, and vendors. Like Quicken, QuickBooks memorizes every transaction you enter in the program's register windows. The next time you enter a transaction, you need only type the first few letters of the vendor or customer name into the payee field and press the tab key—QuickBooks will enter all the appropriate information into the proper fields. Also, if you type an m, h, or t—shorthand for *MontH* and *Today*—in any date field, the program will automatically enter the date for the beginning of the month, end of the month, or current date, respectively. Surprisingly, QuickBooks lacks the useful pop-up calendar that Quicken includes in its date field.

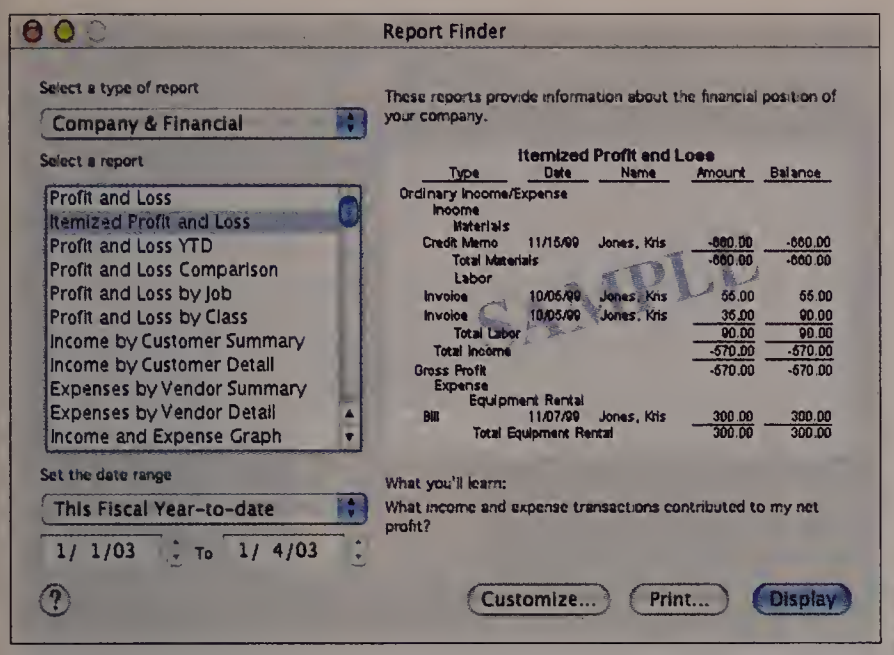
QuickBooks 5 makes it easy to do payroll using Aatrix Top Pay, a third-party program included in the package and completely integrated with the QuickBooks application. A full-featured payroll program, Top Pay takes care of everything. It can print your payroll checks, handle direct deposit of employees' paychecks, and issue reports on everything from how much sick time your employees have used to how much you've paid in payroll taxes and insurance during the year.

Welcome to the Time Warp

While QuickBooks remained locked in the Intuit deep-freeze, many changes took place in the Mac business-software market. Unfortunately, QuickBooks 5 is living in the Dark Ages when it comes to the cross-platform compatibility that is the current hallmark of Mac business applications. Name your favorite business program—Microsoft Word or Excel, FileMaker Pro, MYOB AccountEdge (MYOB Plus for Windows)—and you can bet not only that their file formats are the same in both Mac OS and Windows, but also that the Mac applications have features that equal or exceed those of their Windows counterparts. This is not true of QuickBooks 5.

To share your QuickBooks 5 data with an accountant who's running QuickBooks Pro 2003 (for Windows), you'll need to back up your QuickBooks data file and send the backup file to your accountant, who must then restore your data file. Need to get the file back after your accountant has made changes? Forget it. There's no way to get data created by QuickBooks for Windows back onto your Mac. (By contrast, with MYOB AccountEdge you can simply e-mail your data back and forth to your accountant.) In fact, there's no parity whatsoever between the Windows and Mac versions of QuickBooks Pro. They're two distinct programs with completely different features and data formats. That may have been the status quo in 1997, but it's unacceptable in 2003.

QuickBooks 5 also lacks some key features that many small businesses require. The program is not multiuser capable, so two people can't use the same data file at the same time; this limits the program's usefulness in larger groups, too, where one person may need to enter time sheets or create invoices while another is processing payroll or paying bills. It's also impossible to e-mail invoices, estimates, or reports



Quick View The new Report Finder in QuickBooks Pro 5.0 lets you see what sample reports look like before you print them.

directly from QuickBooks 5; instead, you have to save these documents as PDF files and open your e-mail application separately in order to send them. Both of these features are integral parts of QuickBooks' main competitor, MYOB AccountEdge, and their absence here seriously limits QuickBooks' versatility and value.

New Features Found!

QuickBooks 5 does have two new features. The first is a truly useful Report Finder, which you can use to select and display sample reports before you print them. This tool organizes QuickBooks' financial reports—more than 80 in all, including profit-and-loss statements and inventory price lists—into eight major categories. Any QuickBooks 5 report can be customized to suit your specific needs and then "memorized" so that you can use it in the future. While memorized reports don't appear in the Report Finder, you can access them from the Reports menu.

The other new OS X–only feature is the ability to save any report, statement, estimate, or invoice as a PDF file. It's a nice feature, but this capability is already available within any OS X–native application that allows you to print. It's part of the operating system, which is why it's not available for OS 9 users; QuickBooks 5 simply provides a convenient button.

Macworld's Buying Advice

If you're still using QuickBooks 4 and have no plans to move to OS X, save your money. Almost nothing in this release justifies the $180 upgrade price. But if QuickBooks is the only reason you haven't jumped to OS X, now's the time to make your move. You won't necessarily be getting a better product or—except for the Report Finder—any major new features, but you'll be using familiar software and you'll be running it on the best, stablest OS for handling all your business needs. If you're looking for your first Mac accounting app, nothing on the market is as easy to master as QuickBooks. But there are other choices that are maturer, compatible across platforms, and better integrated with many of the Mac's key applications. □

RATING: ♦♦♦

PROS: Familiar, easy-to-master interface; Report Finder previews all reports; excellent payroll feature.

CONS: No feature or file parity with Windows version; no multiuser capability; no direct link to e-mail; expensive for minor feature upgrade.

PRICE: $300; upgrade from QuickBooks Pro 4, $180

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Intuit, 888/246-8848, www.intuit.com

KEYNOTE 1.0

Presentation Software Dazzles but Lacks Key Features

BY FRANKLIN N. TESSLER

Whether you're reviewing sales figures in a boardroom or teaching history in a classroom, your presentation's style often counts as much as its substance. Apple's Keynote, introduced by Steve Jobs in January, lets you create spectacular slide shows with relative ease. Alas, the fact that Keynote does not include many functions essential for controlling presentations may discourage PowerPoint veterans from switching just yet.

Accessible Interface

Compared with PowerPoint's busy toolbars and floating palettes, Keynote's uncluttered interface should appeal to novice presenters. Labeled icons below the menu bar provide easy access to common functions, such as creating and deleting slides, adding basic slide elements, controlling layering and grouping, and applying master slides. As in PowerPoint, alterations you make to a master slide are automatically applied to all the slides based on it, so you can make global changes in a jiffy.

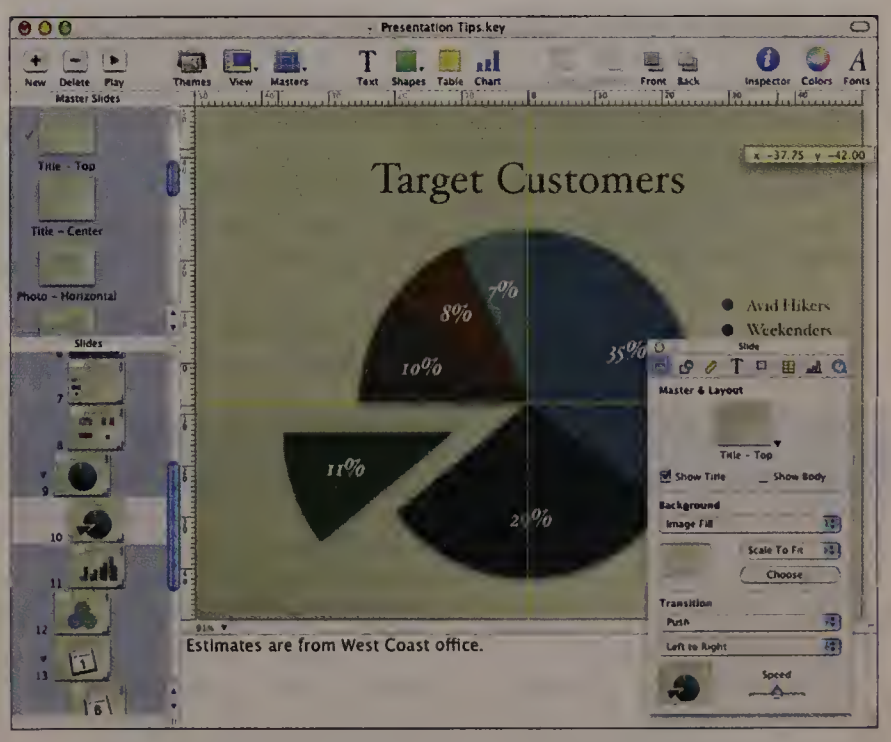
You compose presentations in a partitioned window with three adjustable panes. A large central pane displays the current slide; a smaller, resizable area at the bottom is for speaker notes; and the Navigator pane lets you view your presentation in outline or graphic form (see "Pie in the Sky"). Although the Navigator pane offers a few handy options, such as the ability to display slide masters, we'd like to see an additional view, similar to PowerPoint's Slide Sorter, that would let you view rows of slides at any magnification.

Many of Keynote's most powerful functions reside in tabbed Inspector windows that let you modify a slide's components—including text, graphics, charts, and tables—and specify its master slide, background, and transition. However, a few essential functions, such as font-family and -size controls, are not accessible via Inspector windows.

Cutting-Edge Graphics

Apple has kept its promise to capitalize on OS X's advanced imaging technologies. With fully antialiased text that you can freely rotate or resize, blurred

continues



Pie in the Sky Keynote's interface consists of three parts: an area for the current slide, an area for speaker notes (bottom right), and the Navigator pane (left).

drop shadows, and pictures with variable transparency, Keynote lets you craft powerful, beautiful presentations and layer images to achieve special effects such as a glass window with reflections.

Keynote imports graphics in a variety of popular formats, including JPEG, TIFF, PDF, PICT, and GIF, as well as Adobe Photoshop files. (You can resize or rotate imported graphics, but, oddly, Keynote doesn't let you crop them.) You can also embed Flash and QuickTime movies in slides; however, playback control during on-screen presentations is limited—for example, imported QuickTime movies can't be stopped and restarted during a show, and interactive features in Flash movies aren't supported.

After seeing what Keynote could accomplish, we were eager to jazz up our existing PowerPoint presentations. But the results of our attempts to import PowerPoint files were inconsistent. Although a few presentations made the jump cleanly, many suffered from glitches that required considerable repair work, including shifted graphics on slides and changed text color.

Unlike PowerPoint, which uses a separate application for graphs, Keynote has built-in charting functions, which are more convenient to use. But PowerPoint supports more chart types than Keynote, including surface and 3-D graphs. We were also disappointed by Keynote's lack of a free-form drawing tool and its inability to allow resizing of grouped objects. Keynote's library of predefined shapes and clip art is also much smaller than the extensive library that ships with PowerPoint.

Themes

Recognizing that many speakers lack the resources to build professional-quality slide shows from scratch, Apple ships Keynote with 12 different presentation themes (or templates). Each theme includes color-coordinated masters that range from blank backgrounds to slides with placeholders for titles, bulleted text, and photos. Keynote lets you design and save your own themes, although you're restricted to one bulleted text field on each slide.

Action and Sound

Keynote's Build Inspector lets you choose from nine different build animations that make slide elements appear or disappear. Keynote also includes a collection of eye-popping 2-D and 3-D transitions that you can apply between slides, but its selection of animations and slide transitions is not nearly as extensive as we'd like.

Keynote's build animations suffer from other noteworthy limitations. Unlike PowerPoint, Keynote won't let you specify exact time delays between animations, so there's no way to make a moon image appear three seconds after a sun fades from view, for example. You also can't apply builds to slide masters, so you have to animate each slide individually. Finally, although you can add sounds to slides, Keynote doesn't let you play a sound track throughout an entire presentation.

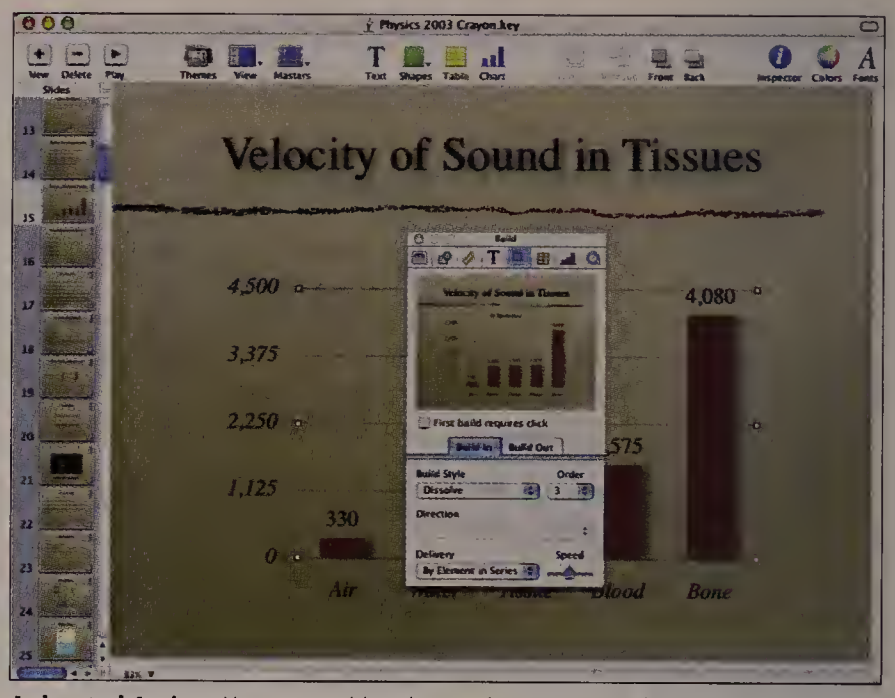
Restricted Navigation

Longtime PowerPoint users will be frustrated by other restrictions of Keynote's on-screen functions. Keynote doesn't let you specify how long each slide should remain in view, nor can you program presentations to loop continuously in a self-running kiosk. If you're in the middle of a slide show, there's no way to jump to a particular frame; you must use frame-by-frame navigation. Support for embedded hyperlinks to other applications is also absent. And unlike PowerPoint, Keynote doesn't display the cursor during a presentation, so you can't use it to point to items on your slides.

As you'd expect a graphics-intensive application to, Keynote puts heavy demands on your Mac's video card when presenting a slide show. Apple recommends at least 32MB of video memory; however, by lowering the screen resolution on our external monitor, we got acceptable performance on a G3 PowerBook with an 8MB video card. (Shortly after Keynote's release, Apple revised its minimum hardware requirements to exclude Power Mac G3 and PowerBook computers with ATI Rage II, Rage IIC, or Rage Pro graphics processors.)

Showing Keynote presentations on Windows PCs is especially challenging. Keynote can save files in PowerPoint format, but special effects don't translate properly if they don't have a PowerPoint equivalent. Although you can save and show Keynote files in QuickTime format, exporting is slow, and the movies are usually much larger than the original presentations.

Apple's choice of XML (Extensible Markup Language) as Keynote's file format will allow developers to create add-ons that considerably extend its feature set; for example, a Keynote presentation viewer for PCs would improve Keynote's portability.



Animated Action Users can add and control animation within individual slides.

Macworld's Buying Advice

Keynote is powerful enough to design presentations that put PowerPoint's best aesthetic efforts to shame. For now, if you deliver your presentations only on Macs and you don't mind Keynote's lack of timing and navigation controls, Keynote merits strong consideration, especially at one-quarter the cost of PowerPoint. But if you need to create self-running presentations, incorporate timed animations, or display your slide shows on Windows PCs, you may be better off waiting until Apple addresses Keynote's shortcomings. □

RATING: ●●½
PROS: Well-designed interface; exquisite text and graphics; inexpensive.
CONS: Poor animation and slide-timing controls; restricted slide navigation during presentations; limited cross-platform viewing.
PRICE: $99
OS COMPATIBILITY: Mac OS X
COMPANY: Apple Computer, 800/538-9696, www.apple.com

Tax-Preparation Software

In an effort to provide *Macworld* readers with up-to-date reviews of this year's tax-preparation software, we have decided to post reviews of tax-preparation software for the 2002 tax year on our Web site, instead of printing the reviews in the magazine. After March 14, the reviews will be available at www.macworld.com/2003/03/reviews/taxsoftware/. This decision is a result of reader input about last year's review of tax software—the programs we discussed were updated right up until April 15, causing some readers' experiences to be very different from our writer's.

ARCHICAD 8

State-of-the-Art CAD Doesn't Skimp on Details Pros Need

BY GREG MILLER

There are CAD (computer-aided design) programs to meet the needs of various people, from homeowners who are redesigning their kitchens to professional architects and designers. But make no mistake, ArchiCAD 8—the latest version of Graphisoft's architectural CAD program—is for professionals only. Expensive and relatively difficult to master, ArchiCAD is just not designed for the hobbyist. Now Mac OS X–native, ArchiCAD 8 is faster than previous versions, and it offers improvements such as true solids modeling and streamlined control of elements and projects, through the new Info palette and Project Navigator features.

3-D Virtual Building Model

Architects think in three dimensions, so Graphisoft has designed ArchiCAD's project workflow accordingly. Instead of working with a series of 2-D drawings, you use ArchiCAD to create a virtual 3-D model that incorporates all the elements of a building, including floors, walls, windows, and doors. With the program's new Project Navigator, you can then control layers, visibility, attributes, and scales to create *views*. These views ultimately become the 2-D drawings and renderings that are needed throughout the design process—conception, design development, working drawings, plan submission, and facilities management. With ArchiCAD, you can also create animations and QuickTimeVR, so you can view the designed spaces—or any object or detail in the project—from any angle.

Automation Improves Workflow

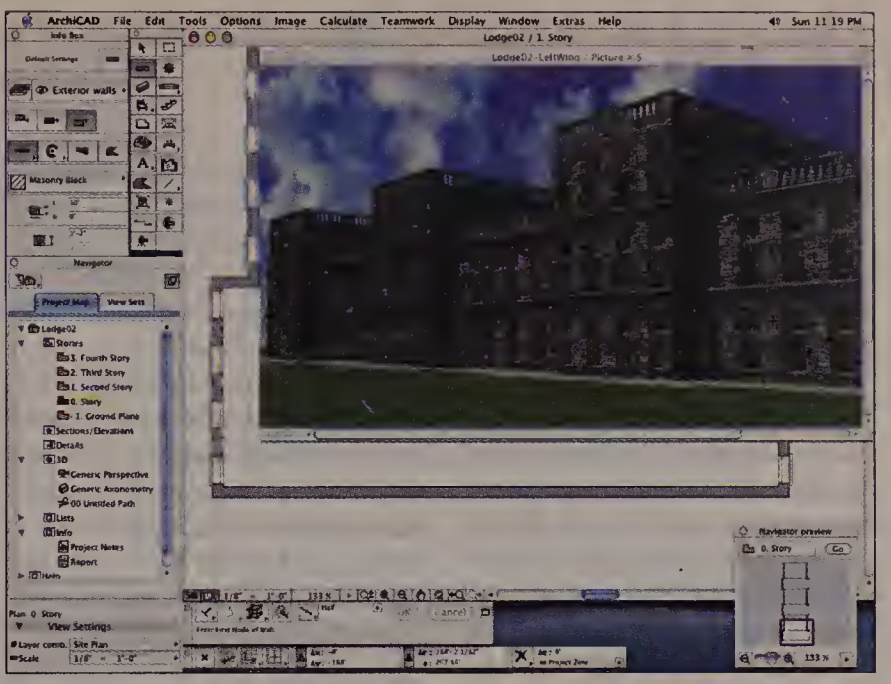
The updated Virtual Building model introduces a very organic way of working. To create a building section or cutaway view, you draw section lines on your floor plan with the Section tool, and ArchiCAD creates the section view in a separate window. When you make a change in the section view, that change is automatically incorporated in the floor plan, and vice versa.

In version 8, it's similarly quite easy to create details. Using the Detail tool, you draw a circle around a portion of a drawing, such as a wall-floor intersection or a doorjamb, and ArchiCAD creates the basic detail drawing for you. You can then add any necessary elements or notes to the detail with typical text and 2-D drafting tools. Throughout this process, the underlying Virtual Building model remains, so any edits you make to one view update all the other views. If you move a door in a perspective rendering or change its dimensions, for example, those changes occur automatically on the floor plans and elevations.

And automation doesn't stop at design changes. ArchiCAD also automates the creation of schedules, bills of materials, and quantities estimates. The database that drives the Virtual Building model contains and handles all this information.

For drawing management, ArchiCAD includes Plotmaker, a page-layout application. Plotmaker lets you establish the different sets of drawings you'll need during the project: for clients, for consultants, and for permit submissions. You can also export your drawings in PDF format, so people who are not using ArchiCAD can view them. And since the software updates all views with every change, Plotmaker can give you an updated set of drawings with a click of a button.

One of this version's best features is a boon to communication: You can publish and automatically upload project documents to the Web. Clients or consultants can then view, comment on, and mark up the documents online.



Virtually Done ArchiCAD 8's interface may be daunting, but the software's power will help architects through even massive projects.

The Team Approach

Both the sole practitioner and the small design firm will benefit from ArchiCAD because the program can quickly and efficiently update all parts of a project. But ArchiCAD has other features that can enable large design firms to work more efficiently.

With ArchiCAD's Teamwork feature, designers can work on different parts of a project file simultaneously. Team members can check out drawings (as well as layers of a drawing or even parts of layers), make changes, and then check them back in to update the project file. The software prevents two people from working on the same part at the same time. This collaboration can also occur remotely, with designers in different locations working on parts of the model and updating the project file the next time they log in to the office network.

The High Price of Power

All this sophisticated power comes at a price. Graphisoft has made significant improvements to ArchiCAD's interface, but the result is quite complex and difficult to learn, compared with programs such as Engineered Software's PowerCADD and Nemetschek's VectorWorks (♦♦♦♦½; *Reviews*, February 2003), which place a heavier emphasis on 2-D drafting. ArchiCAD is a "use it or lose it" kind of application. Regular users will easily maintain proficiency, but occasional users will likely need to keep the user guide nearby.

As with any CAD program, the work that you put into preparing the file for a specific project will pay off in the long run: You'll spend less time and effort on building your virtual model. To speed the modeling process even more, ArchiCAD provides extensive templates and libraries of parametric symbols and objects, including furniture, structural elements, and textures.

Macworld's Buying Advice

At $3,950, ArchiCAD 8 seems expensive. But for that price, you get the most sophisticated top-of-the-line CAD program available for the Mac. Professionals who need it—and can afford it—won't be disappointed. For current users of ArchiCAD, the upgrade price is more than reasonable, at $595 from version 7 and $890 from any versions previous to that. □

RATING: ♦♦♦♦½
PROS: Top-of-the-line, full-featured, sophisticated 3-D modeling; automated drawing creation.
CONS: Expensive; difficult to master.
PRICE: $3,950; upgrade from version 7, $595; upgrades from earlier versions, $890
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Graphisoft, 617/485-4203, www.graphisoft.com

PGP PERSONAL 8.0

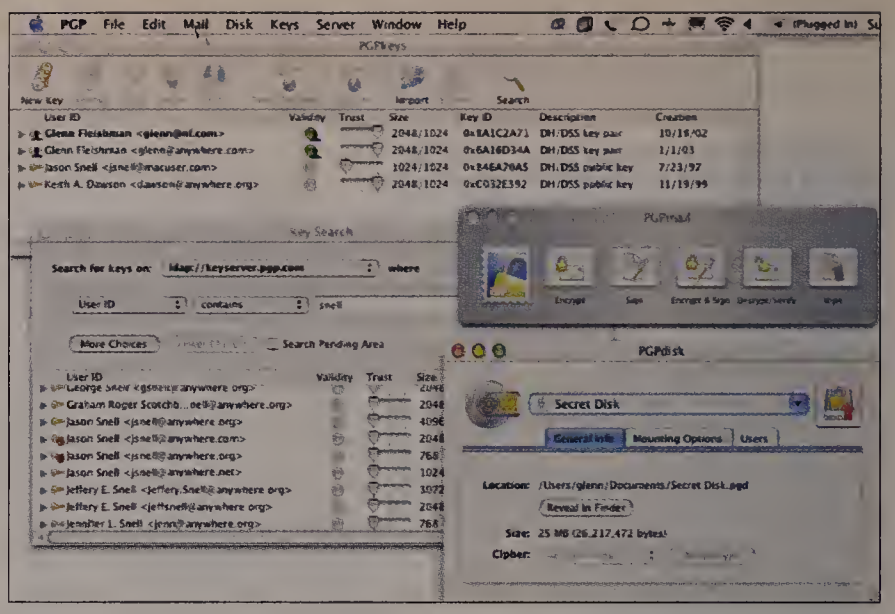
Full-Featured Security System Comes to OS X

BY GLENN FLEISHMAN

The most chilling phrase in the online world is "I know your secrets." We all have sensitive information, whether it's financial records, personal or professional e-mail, or confidential business plans. PGP Personal 8.0 takes a direct approach to safeguarding that information: encrypting e-mail messages and files so that only you and your chosen recipients can read them.

PGP uses a technique called *public-key cryptography* to control access to an encrypted file or disk. Traditional security tools (including options in programs such as Adobe Acrobat) allow you to password-protect files, but that creates a paradox: How do you get the password to your recipient over an insecure channel? The answer is public-key cryptography, which lets you encode items with your recipient's publicly available key, making those items unreadable to everyone except the recipient, who has a second, descrambling *private* key.

With a comprehensive set of features, PGP Personal 8.0 gracefully encodes and decodes items, hiding the computational and management complexity. It also helps you create and manage keys, and it lets you create secure virtual disks on which you can store vital files. For users who routinely exchange critical data or who work at insecure locations, PGP Personal 8.0 will be a vital program.



A Full Toolbox PGP Personal 8.0 gives you tools for managing keys, document encryption, and virtual disks. Plus, it can search an Internet directory for public keys.

Running on OS X

PGP 8.0 is the first version of the long-standing Pretty Good Privacy software to run natively in Mac OS X. This release works only with OS X 10.2 and later, although the keys, files, and disks it creates interact seamlessly with PGP Personal 8.0 for Windows. The package also includes PGP Personal 7.2 for OS 8.6 through 9.X, in case you need to run the program on an older Mac.

Managing public and private keys is the core function of PGP 8.0. In the PGPkeys window, you click on the New Key button to create a pair of keys, link them to your name and e-mail address, and enter a long passphrase that secures the private part of the key. It's then easy to submit your public key to several public-key servers on the Internet, making it available to anyone who wants to send you encrypted information. Likewise, it's easy to find the public key of anyone you want to contact—choose Search from the Server menu, and an interface for searching the key servers appears. (Recipients don't need version 8.0, but they do need a PGP-based program to decrypt your documents or messages.)

Wrestling with the Interface

The previous version of PGP consisted of several programs; each handled a different encryption task. Version 8.0 has been simplified somewhat, with the tools for key, disk, and e-mail–message encryption combined in a single program. (There's a free version for people who don't need all the tools; see "Pieces of 8.0: A Treasure Trove of Components.") Still, some clunkiness remains. We found that it was difficult at first to determine the appropriate tool for various tasks. For instance, to encrypt files with someone's public key, you use PGPmail, whether or not you plan to e-mail the document.

You can access the document options from PGP itself, from PGP's Dock icon, and from the Services submenu of the Application menu (in programs that support Services—Qualcomm's Eudora, for example). Apple's Mail supports PGP directly, and PGP Personal 8.0 includes plug-ins that enable PGP support from within Microsoft Entourage X. With a forthcoming update, Bare Bones Software's Mailsmith will also support PGP Personal 8.0 from within its interface. The more direct PGP support software developers offer, the more pervasive PGP-encrypted mail can become.

Protecting Files

PGP 8.0's PGPdisk tool creates encrypted disk images for groups of files or entire volumes, and you can mount these images just as you would in Apple's Disk Copy—but PGPdisk surpasses Disk Copy in speed, versatility, and level of protection. PGPdisk unmounts disk images automatically if there is no activity, so you can walk away from your computer without leaving your data vulnerable.

There is one significant risk that comes with using PGPdisk: Any data corruption in the disk-image file could render the entire disk unreadable; you should back up your data frequently when you use PGPdisk.

Macworld's Buying Advice

PGP Personal 8.0 is an excellent and inexpensive solution for people who must regularly protect the contents of files or disks, or who frequently need to send and receive secure documents. The rewards for mastering its learning curve are peace of mind and industrial-grade protection. □

RATING: ★★★★½
PROS: Powerful tool protects and exchanges documents safely; integration with several popular e-mail programs.
CONS: Quirky interface remnants from previous versions; somewhat obscure for new users who don't routinely need this level of security.
PRICE: $50
OS COMPATIBILITY: Mac OS X
COMPANY: PGP Corporation, 877/228-9747, www.pgp.com

Pieces of 8.0: A Treasure Trove of Components

PGP 8.0 isn't a unified whole but rather a collection of components, each targeting a particular purpose, kind of user, or type of company. The four components are PGPkeys, PGPmail, PGPdisk, and PGP Mobile. They come in a variety of software bundles—some of which offer, for a price, higher levels of tech support or fixed upgrade costs.

PGP Personal combines the PGPkeys, PGPmail, and PGPdisk components. At $50, it's ideal for the individual user. The extremely budget-conscious user might get by with PGP Freeware (restricted to noncommercial use), which includes only PGPkeys and PGPmail, without the latter's plug-ins for e-mail software.

PGP Desktop ($80) has all the features of PGP Personal, and it includes PGP Admin (due out later this year), one of two stand-alone programs for corporate users. PGP Admin allows you to configure multiple copies of PGP identically.

PGP Enterprise ($125) adds the other stand-alone program, PGP Keyserver, which currently runs only on Sun's Solaris 2.8 Unix system. PGP Keyserver can create a directory infrastructure so a company can distribute keys without requiring tedious verification. Keyserver can also reconstruct lost keys.

Finally, there's PGP Mobile ($70), which runs on Palm OS and Windows CE but, unfortunately, doesn't include a Mac-compatible conduit.

INTERMAPPER X 4.0

Network-Monitoring Utility Transitions Well

BY JONATHAN A. OSKI

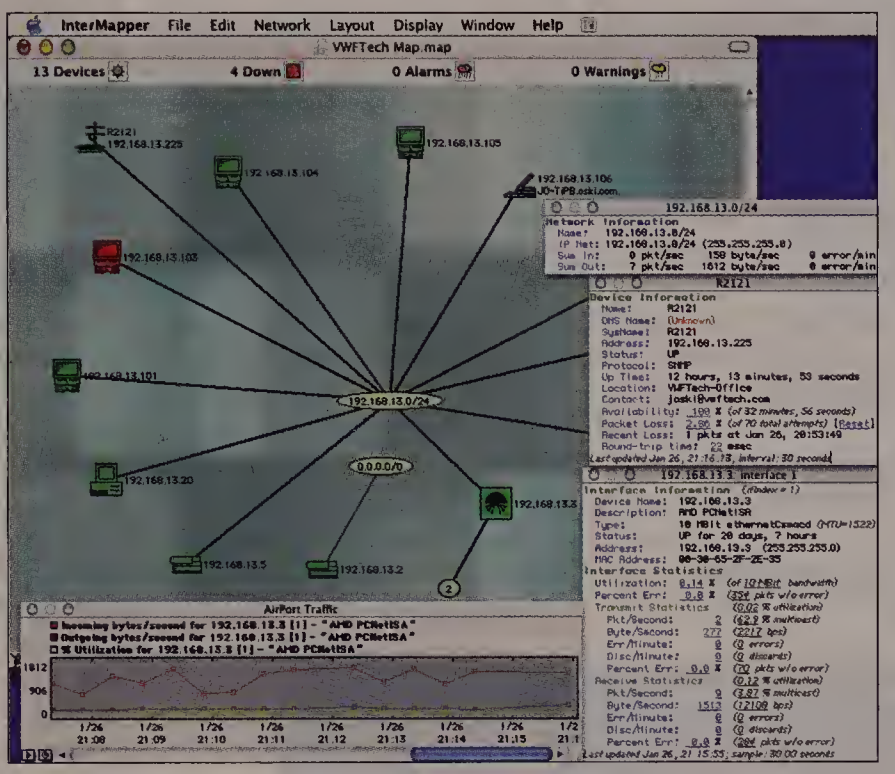
When you're the one responsible for ensuring the accessibility and availability of your network, how do you get enough sleep? One good way is to use monitoring tools, such as Dartware's InterMapper, to watch your network for you. The recently released InterMapper X and InterMapper Remote, both at version 4.0, mark a significant shift in Dartware's flagship product. The previous version, InterMapper 3.8, was a stand-alone OS 9 application; the new release debuts as an OS X–native application that includes separate server components.

Although these components don't yet have feature parity with the stand-alone application, the ability to deploy them separately and incorporate the new submapping feature illustrates the direction in which Dartware is taking the product. The server, which runs as a faceless background daemon on OS X, can be controlled from another workstation using the Java-based companion program, InterMapper Remote. With this, and the addition of Windows- and Unix-based versions of the product, you can now deploy InterMapper in much more flexible and scalable ways.

A Family Affair

InterMapper X 4.0 has three components: the stand-alone InterMapper X program, InterMapper Console, and InterMapper Server. InterMapper X combines a dashboardlike user interface and a built-in SNMP polling engine. Console and Server separate these presentation and polling functions into two discrete components. Console can be used only on systems that have Server installed. The separately licensed companion program, InterMapper Remote, can be used from another workstation to configure and view maps stored on a server.

If your network isn't too complex and you can dedicate Macs to running the stand-alone InterMapper application, this is clearly the best approach—for now. Larger, distributed networks with a mix of operating systems are better-suited to Dartware's new server-and-remote deployment model, as it allows you to install, configure, and view maps from virtually anywhere.



Reading the Map InterMapper uses maps as the primary interface for monitoring your network. You can drill down for more information by selecting map objects.

Getting Noticed

As its name implies, InterMapper monitors your network through maps. They provide a dashboard view of the status of your network's devices (routers, switches, servers, and even wireless access points) and services (mail, DNS, database, and so on). They can also display network traffic flow on the links between objects on the map. You can create a map manually, let InterMapper do it through auto-discovery, or use a combination of the two. With auto-discovery, InterMapper uses SNMP and ICMP (ping) probes to discover your network's devices and services and then prepares a map that diagrams the network. This is a time-saver, but if you need to monitor only specific devices and services on your network (or are limited by license), you should create your maps manually.

The map uses icons of various shapes to represent devices and services, and the icons' pop-up windows contain additional information. Maps in InterMapper are apt to have more than one object for a single device, especially for servers you use to monitor several services (mail, database, and so forth) on a particular host. A significant new feature is the Map Status probe: on any map, you can have an icon that—through color changes—shows the condition of another network. (Dartware calls these networks "submaps.") Using InterMapper Remote, you can easily open a submap for detailed status information.

InterMapper comes bundled with numerous TCP, UDP, and SNMP probes to test a variety of services, including 4D Server, POP, SMTP, HTTP, DNS, and DHCP. Dartware's probes are designed to simply test whether a service on a specific port is responding properly, but you can customize them to test response to a specific query on a particular TCP or UDP port.

Once your maps are built, you need to let InterMapper know when and how to inform you of interruptions in device or service availability. We found that the notification features were powerful and flexible enough to serve the needs of almost any organization.

Look but Don't Touch

InterMapper relies solely on SNMP and ICMP for monitoring the state of your network. As a result, it collects only limited information for devices, like software-based routers that don't support SNMP. Because there are no client agents to act on your behalf, you cannot control (shut down, restart, or transfer files to and from) the hosts InterMapper monitors.

Given Dartware's announced shift in development, we're anxious to see all of InterMapper's features—especially strip charts that display statistics such as network traffic over time—ported to InterMapper Remote.

Macworld's Buying Advice

Scalability clearly differentiates InterMapper. Whether you're responsible for managing several networks or a large multisite network for a single enterprise, InterMapper's submapping feature will give you quick visual cues to network issues, wherever the problems may lie. Its reliance on SNMP and its agentless deployment model limit its management capabilities, but for monitoring your mission-critical servers and network components, it's mature, scalable, and cost-effective. □

RATING: ♦♦♦♦

PROS: Flexible; quick to deploy; submaps add great scalability; inexpensive.

CONS: Retrieves only limited information from devices that don't support SNMP; some features not available when using Server and Remote.

PRICE: from $495 (25 devices) to $2,395 (unlimited devices); InterMapper Remote, from $245 (single) to $3,695 (20-pack)

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Dartware, 603/643-2268, www.dartware.com

SUPERCARD 4.0

Excellent Software-Development Application Reclaims Its Top Spot

BY JOHN DIXON

Since the Mac's introduction in 1984, programs for it have been easy to use but difficult to create. Throughout its 12-year history, Solutions Etcetera's SuperCard has tried to bring the ability to create Mac programs to a broader spectrum of people. Version 4.0 is the most extensive upgrade in SuperCard's history, adding an abundance of new features and a new interface.

The Basics

SuperCard combines two familiar and powerful metaphors for building software: the Mac metaphor of windows, controls, and pull-down menus as a way of navigating through a program; and the HyperCard metaphor of cards and stacks of cards as a way of storing information.

The glue that binds it all together is SuperTalk—a language based on the HyperCard standard. SuperTalk is designed to be so like English that you can write it using nearly everyday English. For example, the commands go to the previous card and put the number of lines of card field 1 into card field 2 are easy to write and understand.

Better Than Ever

Launching SuperCard for the first time will bring up SuperCard Runtime Editor (RTE). RTE provides a new Object Browser interface (available from RTE's Object menu), along with utility projects (in RTE's Utilities menu) for other editing tasks.

New standout features include a function called shell(), which allows for the execution of Unix shell commands under Mac OS X. And custom properties make the creation and management of radio-button groups, tab controls, sheets, window shapes, and pop-up menus a simple point-and-click operation. SuperCard's single Carbon binary will run on OS 8.6 (using Carbon Lib 1.6 or higher) through OS X, and SuperCard's display code has been completely overhauled, which should result in faster window redraws.

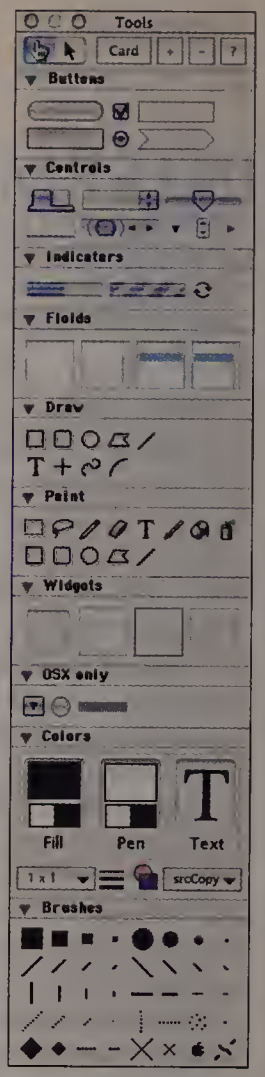
A simple application called HC DropConverter directly converts HyperCard stacks to SuperCard projects, bringing in all backgrounds, cards, card and background objects, and associated scripts.

Under OS X, your projects will be fully Aqua-capable. With 20 new control types and 130 new commands, functions, and properties added to the SuperTalk syntax, SuperCard 4.0 now supports almost the complete Apple control architecture.

Multiple Editions

SuperCard's Developer Edition includes SuperEdit, a separate application used only for building and editing SuperCard Projects.

RTE and SuperEdit's capabilities and functions overlap to a great extent. RTE comes into its own when objects and scripts need fine-tuning and immediate feedback is required. SuperEdit, however, allows you to not only create everything pertinent to a project but also design icons, cursors, and color look-up tables. You can also import sounds, Xcmds, and Xfcns.



Toolbox All the tools and controls in SuperCard 4.0 are available in one palette.

After you've built a SuperCard project, you must decide how you're going to distribute it. The free SuperCard Player runs projects, but SuperCard's Standalone Maker allows for the creation of stand-alone applications that don't require the presence of SuperCard to run.

Macworld's Buying Advice

SuperCard 4.0 has arrived just in time if the program is going to regain the popularity it once had. This arena is now getting a little crowded, with RealBasic's RealBasic and Runtime's Revolution available (or soon to be available) for Mac OS and for Windows. So far, though, SuperCard is the easiest to use, and it delivers extremely professional-looking Mac applications. □

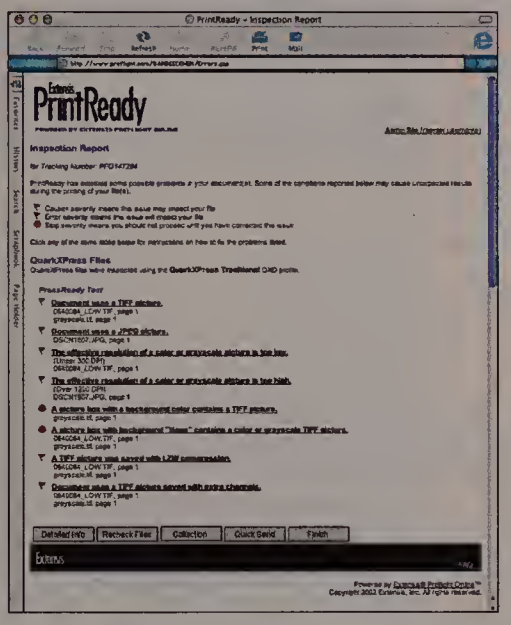
RATING: ★★★★½
PROS: Rock-solid development environment.
CONS: A few bugs in the utility palettes.
PRICE: Standard Edition, $179; Developer Edition, $279; upgrades from HyperCard or previous version of SuperCard to Standard Edition, $129; to Developer Edition, $179
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Solutions Etcetera, 530/644-7382, www.supercard.com

PRINTREADY

Online Alternative to Preflighting Falls Short

BY SANDEE COHEN

Preflighting documents—checking them for production and prepress errors before sending them to a service bureau—is the desktop-publishing equivalent of flossing teeth. We all know that we *should* preflight, but few companies or individual designers do so regularly. Until now, most preflighting needs have been handled by software on a user's machine—either special preflighting programs or the preflighting capabilities built into a desktop-publishing application. Now Extensis has created an alternative: PrintReady. But this product serves only users who want to preflight QuarkXPress 3 and 4, EPS, and PDF files. For a service that's just a few months old, it's surprisingly out of date.



Strictly Wrong The PrintReady report shows errors labeled according to their severity.

An Online Preflighting Service

Although PrintReady ships in a box, the CD doesn't contain preflighting software. Rather, it holds a plug-in for linking to the PrintReady Web site, accessible only via a browser running in Mac OS 9 or OS X's Classic mode. You then check your documents into the Web site, which examines them online. The Extensis documentation assures you that your file doesn't actually get sent to the PrintReady server, and that the service examines the document while it stays on your machine (however, this may not allay some paranoid fears).

Customized Preflight Checks

For an XPress document, the PrintReady service can flag as many as 60 types of potential errors so you can fix them before sending the file to a service bureau. It covers a wide range of errors, including missing fonts, images of the wrong resolution, and strokes that are too thin. You have the option of prioritizing each type of error and creating profiles based on this information. You can also set a profile so that an error is not reported to you, triggers a yellow caution icon or a red flag, or stops the job from going through.

PrintReady comes with a default profile for each type of document it handles. But the service can be much too strict: PrintReady will flag TIFF images even though today's workflows easily handle TIFFs. And PrintReady overlooks some errors it should flag—such as two colors that share the same screen angle used together in a multi-ink, and overprinting.

Stuck in a Time Warp

Sadly, much of PrintReady feels behind the times. The service

continues on page 46

RATING: ♦♦

PROS: Excellent value for five-person workgroup that uses only the supported file formats.

CONS: Limited number of file formats supported; no support for OS X.

PRICE: Basic edition, $350; Service Provider edition, $2,000; Enterprise edition, $10,000

OS COMPATIBILITY: Mac OS 9

COMPANY: Extensis, 800/796-9798, www.extensis.com

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THIS MONTH IN DIGITAL CAMERAS

Model	Nikon Coolpix 3500	Canon PowerShot S45	Olympus C-50 Zoom	Olympus C-5050 Zoom
Rating	♦♦♦	♦♦♦♦	♦♦♦½	♦♦♦½
Resolution (in megapixels)[A]	3.2	4.0	5.0	5.0
Price	$379	$649	$599	$799
Lens				
Zoom (35mm equiv.)	3× (37mm–111mm)	3× (35mm–105mm)	3× (38mm–114mm)	3× (35mm–105mm)
Maximum Aperture	f2.7–f4.8	f2.8–f4.9	f2.8–f4.8	f1.8–f2.6
Media Supported	CompactFlash Type I	CompactFlash Type II	xD Picture Card	CompactFlash Type II, SmartMedia, xD Picture Card
Size (in inches)[B]	compact, 4.5 × 2.3 × 1.2	compact, 4.4 × 2.3 × 1.7	compact, 3.9 × 2.3 × 1.6	midsize, 4.5 × 3.0 × 2.7
Weight (in ounces)	6.2	9.2	6.8	13.4
Bundled Software	NikonView	Canon Digital Camera Solutions, ArcSoft Camera Suite	Olympus Camedia Master	Olympus Camedia Master
Bundled Hardware	16MB CompactFlash card, USB cable	32MB CompactFlash card, USB and video cables	32MB xD card, remote control, USB and video cables	32MB xD card, remote control, USB and video cables
Battery[C]	lithium ion	lithium ion	lithium ion	AA or CR-V3
Additional Features	swiveling lens	AF illuminator, support for underwater case, RAW image mode, can save settings	My Mode can save settings	flip-up (nonrotating) LCD, AF illuminator, hot shoe, RAW image mode, My Mode can save settings
Movie Mode	yes, no sound (35-second maximum)	yes, with sound (3-minute maximum)	yes, no sound (16-second maximum)	yes, with sound (maximum length dependent on card)
Image Quality	Good; very noisy indoors or in low light; red-eye a problem.	Very good; images not as noisy as the competition's.	Very good; slightly noisy.	Very good; purple fringing and noise is higher than normal.
User Interface	Very good.	Very good; can be intimidating.	Very good; customizable shortcut menu.	Good; a bit difficult to use; customizable shortcut menu.
Pros	Small body with unique lens design; good macro performance; many scene modes.	Small metal body; full manual controls; can save favorite settings; AF illuminator; very good movie mode.	Compact, well-designed metal body; lots of manual controls; fast performance; can save favorite settings.	Reads three types of memory cards; hot shoe for external flash; full manual controls; can store eight custom settings; excellent movie mode.
Cons	Red-eye a problem; images noisy in low light; no optical viewfinder or AF illuminator; can't adjust basic settings in scene mode.	Red-eye sometimes a problem; clumsy four-way menu switch; no diopter correction setting.	Images slightly noisy; purple fringing on image edges; no AF illuminator; limited movie mode; no manual focus or white-balance options.	Noise and purple fringing too common in images; complex controls and menus; performance not as good as the competition's; manual on CD.
Contact	800/645-6687, www.nikonusa.com	800/652-2666, www.powershot.com	888/553-4448, www.olympusamerica.com	888/553-4448, www.olympusamerica.com

Cameras are listed by resolution and then alphabetically by vendor. [A]The camera's effective resolution, not the CCD's resolution. [B]Width × height × depth. [C]Battery charger included unless otherwise noted.

BY JEFF KELLER

Want a full-featured, high-resolution digital camera in a small package? Take a look at either Olympus's C-50 Zoom or Canon's PowerShot S45.

The 5-megapixel C-50 is a well-designed camera with a metal body and a 3× zoom lens. It works well in point-and-shoot mode and has a good set of manual controls in case you need them (it lacks manual focus and white-balance controls, however). The C-50 is easy to use, and it even lets you save a group of favorite settings to the mode wheel for easy recall. Photo quality is very good, although images were a little on the noisy side, and edges often displayed purple fringing.

Canon's PowerShot S45 has 1 million fewer pixels, but it's no slouch. It has the same CCD and image-processing chip as Canon's flagship PowerShot G3 (♦♦♦♦½; *This Month in Digital Cameras*, January 2003), but it's smaller and has only a 3× zoom lens. The S45 has all the features of the C-50, but it has better picture quality, manual focus and white-balance controls, an autofocus (AF) illuminator, and a better movie mode (with sound). All of these things tip the scales in the S45's favor, but the Olympus camera is a good choice if you want something a little smaller, or if you need the higher resolution.

If you're looking for a more substantial camera with support for an external flash and conversion lenses, consider Olympus's C-5050 Zoom. This 5-megapixel camera has a fast, f1.8, 3× optical zoom lens (which allows for great low-light shooting), an increased flash range, and support for three media types: CompactFlash, SmartMedia, and xD Picture Card. Although I saw noticeable purple fringing in many shots and a bit too much noise at the ISO 64 setting, the C-5050's overall photo quality was very good. The camera is extensively customizable but complex—plan on spending some time getting used to the menus and options.

This month's odd camera out is a 3.2-megapixel update to the Coolpix 2500: Nikon's Coolpix 3500, which, unfortunately, inherits the shortcomings of its predecessor—excessive red-eye problems, the absence of an optical viewfinder, and noisy images in low light. Picture quality outdoors is quite good, but the 3500 just doesn't have a lot going for it that raises it above the competition in the under-$400 market. □

JEFF KELLER is the editor of the Digital Camera Resource Page. Check www.dcresource.com for in-depth reviews of the cameras discussed here, with sample images.

VIRTUAL PC 6

Update Improves OS X Integration, Performance, and Usability

BY JONATHAN A. OSKI

If you're a PC user and Apple's recent ads have persuaded you to switch, but you still pine for some of the PC applications you left behind, Connectix's recently updated Virtual PC 6 might give you the best of both worlds. The new release improves integration with OS X (especially with the Dock) and lets you mount drive images on the desktop, and the company claims that this version's performance is 25 percent faster than Virtual PC 5.0's (4½; *Reviews*, April 2002). But before you rush out and buy this product (or upgrade to it), realize that you're not getting a PC for $250 (or less). What you're buying is software that allows you to run PC operating systems and applications on your Mac.

More Will Make You Merrier

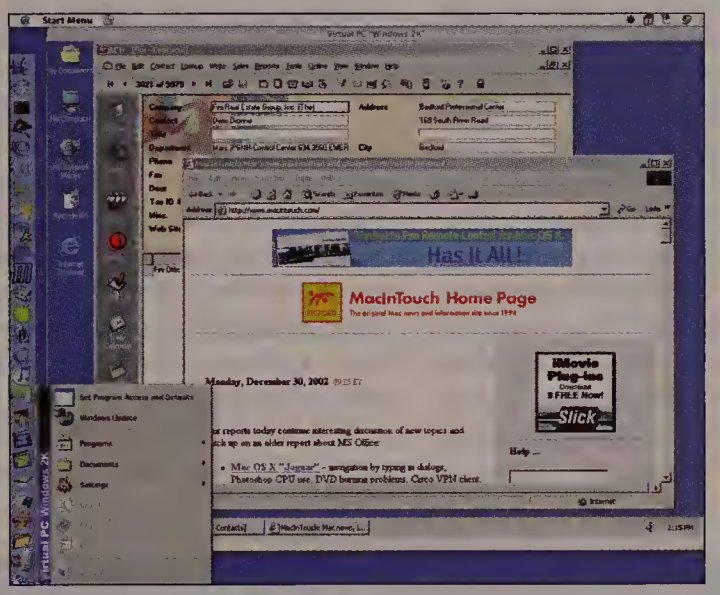
PC-emulation packages have always been a demanding lot, and Virtual PC 6 is no exception. It will run in OS 9 on any G3 or better Mac; however, we chose to focus on OS X. The program requires a 500MHz G3 or G4 with 192MB of RAM and 1GB to 2GB of free disk space, and Connectix recommends that you use OS X 10.2.3. Our test platforms were an 867MHz Quicksilver G4 with 1GB of RAM and a 550MHz PowerBook G4 with 512MB of RAM. To verify the advertised performance improvements, we ran identical tests using Windows 2000 Professional installations for both Virtual PC 5.04 and 6 in OS X 10.2.3 on our test platforms.

To determine the usability of Virtual PC, we ran a number of applications, including ACT, a contact- and sales-management tool from Interact Commerce; AvantGo (with Palm HotSync Manager), a conduit for replicating Web-based content on Palm OS handhelds; and Microsoft Visio Enterprise, a technical-illustration package.

Despite Connectix's claims, which were based mainly on benchmarking-software results, our tests showed that Virtual PC 6 performed only 5 to 10 percent faster on average than version 5.04. The desktop system outperformed the PowerBook by nearly a 2:1 margin in many of the tests, indicating that the size and presence of Level 2 and 3 cache (found in the CPUs of newer PowerBooks and desktop G4s, but not in iMacs) plays a big role in Virtual PC's usability.

More Than Performance

Windows users are accustomed to launching applications from the Start menu in the taskbar—but with past versions of Virtual PC, they couldn't see the taskbar unless the program was running. Virtual PC 6 puts a Start icon in the Dock that you can click on to bring up the Windows Start menu. Backing up Virtual PC drives used to be a headache, as you had to back up the entire drive image. With this version, you can perform incremental backups with a program such as Dantz's Retrospect. USB printing is still problematic, because you can't use the printer from both Windows and Mac applications simultaneously.



Getting a Good Start Virtual PC 6 can install a Start icon in your Dock, so you can launch Windows applications without actually having to start up Virtual PC.

Macworld's Buying Advice

If you upgrade in the hopes that your Mac will finally run Windows applications as fast as a PC, or because you're unhappy with Virtual PC's current performance on your Mac, you're apt to be disappointed. This release is no watershed. But the integration with the OS X Dock and the desktop mounting of disk images are nice additions. And as was the case with Virtual PC 5.0, we found that version 6's performance was perfectly acceptable on our Quicksilver G4; we'd recommend either version for the daily use of applications similar to those we used. □

RATING: 4½

PROS: Dock integration eases PC-application launching; allows backup of individual files in drive images.

CONS: Performance improvements are only very slight; Mac OS and Virtual PC can't share USB printers; some instability.

PRICE: DOS only, $129; Windows 98 or XP Home, $219; Windows 2000 or XP Pro, $249; upgrade, $99

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Connectix, 650/571-5100, www.connectix.com

FORMAC STUDIO DV/TV

Personal Video-Capture Device Records and Plays Television in High-Quality Digital Format

BY JONATHAN SEFF

When El Gato Software released the EyeTV last year (★★★½; *Reviews*, November 2002), Mac users finally gained access to a computer-based digital video recorder (DVR) with features similar to those of the TiVo and ReplayTV. A slightly different take on the concept, the Formac Studio DV/TV delivers higher-quality video recording but lacks some of a DVR's advantages.

RATING: ★★★★
PROS: Records in high-quality DV; good scheduling software; converts analog TV and tapes to DV.
CONS: Doesn't let you watch while recording; no on-screen remote; no constant buffer of recorded material.
PRICE: $399
OS COMPATIBILITY: Mac OS 9 (no scheduling function), Mac OS X (no FM tuner)
COMPANY: Formac Electronic, 877/436-7622, www.formac.com

All in One

The Studio combines an analog-to-DV converter, an FM radio tuner, and a TV tuner and capture device. To begin, install the software, attach your coaxial cable or antenna to the Studio's TV input, and then connect the Studio to your Mac with the included FireWire cable.

Once the Studio is connected, you launch the AppleScriptable StudioTVR software, and a setup assistant guides you through creating a list of the channels you receive. By default, the list displays only channel numbers, but you can enter names manually.

Big Screen The Studio DV/TV gives you a large window in which to watch TV, but you can change channels only via a drop-down menu.

Watching the Tube

The Studio captures programs in DV format (unlike the EyeTV, which uses MPEG-1 format). Because the Studio's hardware box, and not the Mac's CPU, compresses the video, we were able to use it successfully on a 466MHz iBook SE and on a dual-867MHz Power Mac G4. DV offers 720-by-480-pixel resolution, which lets you choose several window sizes, up to native DV size, without loss of quality.

The Studio TVR software, however, lacks some features you'd expect from a DVR. It has no on-screen remote. You can't scroll through channels, and you have to access a drop-down menu at the bottom of the viewer just to choose a channel. Also, you can't pause or replay the last few seconds of live TV—since DV format uses 215MB of disk space for each minute of video, the Studio doesn't record a constant buffer of material to your hard drive.

Recording Shows

As with DVRs, you press a button to begin recording a show while on a channel. But with the simple TVR Scheduler application, you can schedule individual or repeat recordings, schedule recordings automatically via TitanTV (www.titantv.com; registration and

continues on page 46

DiskWarrior® has than

1999 Macworld Editors' Choice Awards
Winner, Utility Software. "DiskWarrior is an excellent ax to add to your disk-repair and -maintenance arsenal. DiskWarrior's ease of use, speed, and new method of fixing disk problems make it a powerful disk-maintenance product."

1999 MacUser Awards
Best Utility/Enabling Software. "For providing a new, easier to use, safer, and often more successful alternative to more bloated recovery applications, the judges felt DiskWarrior deserved top billing..."

1999 Apple Design Awards
Most Innovative Product, Runner-up Best New Product

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MAGIC BULLET SUITE 1.0

After Effects Plug-ins Give DV a Realistic Filmlike Look

BY ANTON LINECKER

Since the early days of television, making video look like film has been as difficult as turning lead into gold. Magic Bullet Suite 1.0 Standard Definition edition, a set of After Effects 5.5 plug-ins developed by The Orphanage and distributed by Red Giant Software, takes a great step toward this elusive goal. But don't expect the leap to be easy—your talent and the amount of time you spend tweaking your video will greatly affect the quality of your results.

RATING: ♦♦♦♦

PROS: Impressively realistic results; converts between PAL and NTSC standards; good documentation; very good overall results.

CONS: Long render times; motion-detection feature overlooks some fast motion.

PRICE: $995

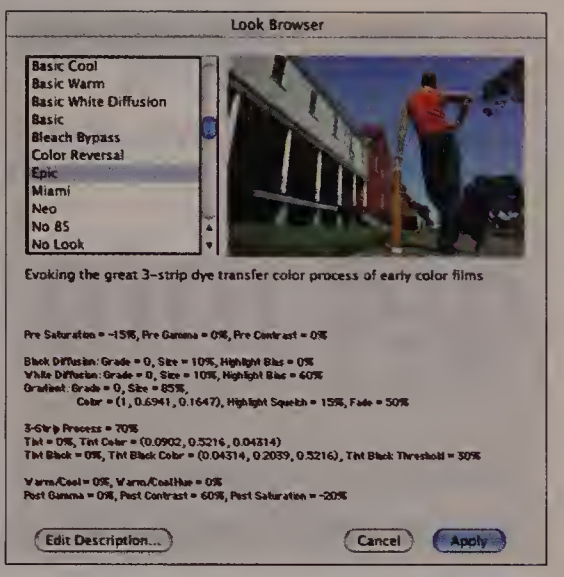
OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Red Giant Software, 415/274-2000, www.redgiantsoftware.com

A good filmlike look starts with high-quality progressive images. Magic Bullet converts interlaced video to 24- or 30-fps (frames per second) progressive video—no easy feat. As it deinterlaces the video, Magic Bullet preserves as much detail as possible with its Motion Detection feature. Magic Bullet can also reduce the artifacts inherent in digital video.

The suite fared well with most footage, but shots with fast panning presented problems: at 24 fps, there was severe strobing in some sections. For the best results, we needed to keyframe the Motion Detection and Detail Pattern Size settings, which was irritating because Magic Bullet also slows rendering.

Look Suite is the aesthetic center of Magic Bullet, with presets that emulate popular film-shooting styles and postlab processes, such as Bleach Bypass and 3-Stripe color printing. The results are surprisingly realistic, and you can make your own presets for future use.



A Bevy of Beauty Look Suite's Look Browser offers editable presets that emulate camera techniques and film-lab processes.

The other three components of Magic Bullet Suite are also present in Final Cut Pro and Avid Xpress DV. Broadcast Spec and Letterboxer do what their names imply. The Opticals component matches film dissolves and fades better than most video-editing programs.

The plug-in set takes full advantage of the 16-bit color workspace provided by After Effects 5.5 Production Bundle. It can also convert video from the PAL standard to the NTSC standard and back again—very handy for video pros.

Macworld's Buying Advice

Magic Bullet Suite 1.0 Standard Definition edition goes a long way toward giving digital video an authentic filmlike look. Video pros now have a real option when it comes to creating true filmlike quality—if they have patience. □

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any disk utility ever.

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Outstanding Disk Rescue Product. "DiskWarrior belongs in the arsenal of every Mac owner!"

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MacHome 8th Annual Home Choice Awards
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Macworld
The Mac Product Experts

NETWARE CLIENT

Utility Breaks One More Barrier in the Mac-Windows Divide

BY MARK H. ANBINDER

Although Mac OS X has made accessing Windows file servers practically seamless, Mac users who need to access Novell NetWare servers still need server-based software, such as Novell's Native File Access, or client-side software. For lone Mac users, a client-side solution is the better option. One such program is Prosoft Engineering's NetWare Client for Mac OS X, IP Edition.

NetWare Client launches like an application but, confusingly, has no user interface. Once launched, it places a small tree icon in the Finder's menu bar, from which users can access login and logout, volume selection, and preferences dialog boxes. This contrasts sharply with Thursby's Dave, which users access through System Preferences, and the Jaguar Finder's Connect To Server dialog box.

Cryptic error messages such as "Invalid IP number detected" appear in the corner of a window for just an instant and then fade away before they can be deciphered or scribbled down. NetWare Client's windows ignore important conventions such as ⌘-W to close and escape or ⌘-period (.) to cancel.

Prosoft's documentation assumes that users have a substantial understanding of NetWare and its terminology (such as *tree* and *context*), so novices will need the help of a knowledgeable server administrator. We were frustrated that Prosoft's support line, which isn't toll-free, always landed us in a voice mailbox rather than connecting us to a person.

Macworld's Buying Advice

A large group of Mac users in a NetWare network environment would do well to convince their network administrator to install Novell's Native File Access, making the translation the server's job. Prosoft's NetWare Client makes more sense for either one Mac user or just a handful of them. □

RATING: 2½

PROS: Opens a path to NetWare servers for small groups of Mac users.

CONS: Less Mac-like than other Mac-oriented network-access client software; cryptic error messages vanish before they can be deciphered.

PRICE: 1-user license, $149; 5-user license, $725; other pricing available

OS COMPATIBILITY: Mac OS X

COMPANY: Prosoft Engineering, 877/477-6763, www.prosofteng.com

PrintReady

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handles only PDF, QuarkXPress 3 and 4, and EPS files. There is no support for XPress 5, Adobe InDesign, PageMaker, or other formats that popular preflighting applications such as Markzware FlightCheck support. The browser plug-in does not work in OS X, although Extensis says that OS X support is a top priority for new versions of the service.

Priced According to Need

The Basic edition lets five users access the online service and preflight as many documents as they wish. At $350, it's a bargain, as it costs much less than a single-user copy of a preflighting program such as Extensis's Preflight Pro or Markzware's FlightCheck. PrintReady also comes in a Service Provider edition that costs $2,000 per year for an unlimited number of users and as many as 12,000 documents. The Enterprise edition lets you check 30,000 documents per year.

Macworld's Buying Advice

Some people can benefit from PrintReady, but most should either choose more-versatile preflighting software that resides on their desktops or wait until the service supports more applications and file formats. □

Formac Studio DV/TV

continued from page 44

listings are free), or even schedule recordings remotely from another Mac. There's no audio, and you see only a choppy video display while recording, but when you finish, you get high-quality video at the resolution of a standard (not wide-screen) DVD. Because of this, you can back up your favorite shows in DVD or SVCD (Super VideoCD) format.

Analog Conversion

The Studio DV/TV can also convert analog to DV, and it comes with composite and S-Video inputs and outputs, like its predecessor, the Formac Studio (4; *Reviews*, August 2001). In case you don't need TV and FM tuners, Formac also sells the $289 Studio DV without these options.

Macworld's Buying Advice

Formac's Studio DV/TV is unique in offering both analog-to-DV conversion and TV viewing and recording in DV format. If you want to watch TV in large format or record it for DVD, this device is a good choice. If you don't need to capture such a large picture—and don't need to convert old analog tapes to DV format—consider the EyeTV. □

- SliMP3
- MP3 Rage
- Ten for X
- Gimp-Print
- DiskTracker
- MacXword

Sound Advice

LIKE THE BULK OF AN ICEBERG, MUCH OF THE MAC MARKET hides beneath the surface. For every Microsoft Office, FileMaker Pro, or Adobe Photoshop, there are 50 products you may never hear about.

Whether it's a vital shareware utility or a cool gizmo you just shouldn't be without, these overlooked gems can transform your Mac from something you work with to something that works for you. I'll use this monthly column to point out some of these smaller Mac programs that I think deserve a closer look.

The MP3 Lifestyle

By placing my entire music collection at my fingertips, Apple's iTunes and the iPod have spoiled me. Even though I'm a serious music hound, I no longer listen to music in my living room—my CD player just can't give me the instant access to my 23,000-song library that I've come to expect.

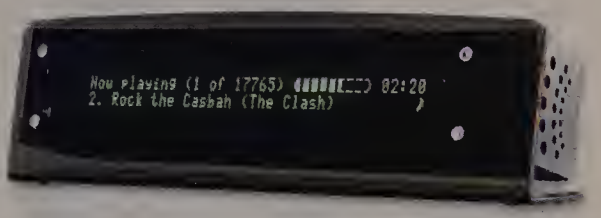
But that's changing. Thanks to Slim Devices' $249 **SliMP3**, even my stereo has gotten MP3 savvy. This thin box can read MP3 files from an OS X Mac (as well as a Unix computer or PC) via an Ethernet network and play them through a stereo. Sure, I could connect my Mac's audio output to my receiver or plug the iPod into the stereo, but when I'm in the living room, the last thing I want to do is stare at a computer screen or fiddle with a mouse. The SliMP3 integrates elegantly with the rest of the audiovisual equipment in my cabinet, right down to the infrared remote control.

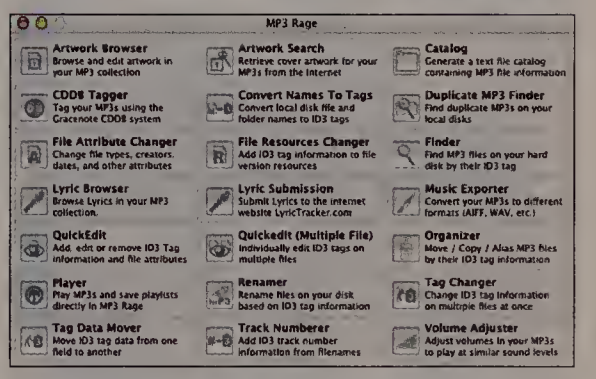
Setup was a breeze: I just connected the box to my home network and to my stereo receiver's inputs. (I don't have Ethernet in my living room, so I bought Linksys's $116 WET11 wireless bridge to connect the SliMP3 to my AirPort network.) Then I launched the small server application on my Mac. It automatically found my iTunes Music Library file and was ready to go.

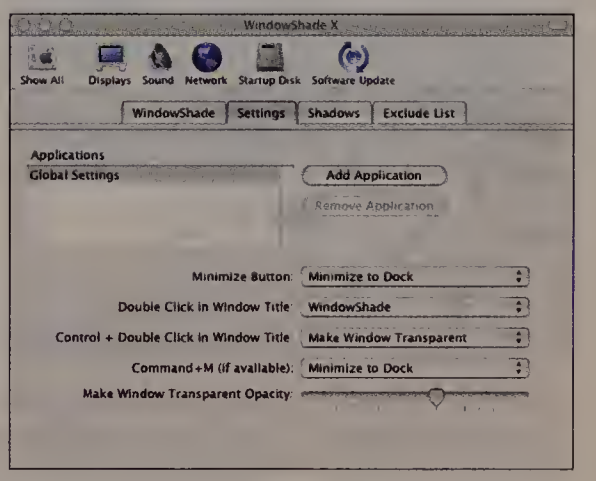
You use the remote to navigate through menus on the SliMP3's small LED screen; you can browse your collection by artist, genre, album, or playlist. iTunes playlists appear on the SliMP3 automatically, and you can create and edit additional playlists by connecting to the SliMP3 server via a Web browser.

Of course, there are less costly ways to get music from a computer to a stereo. But I really don't want to set up a Mac in my living room. Now I don't have to.

On the subject of MP3s, if you're going to have a 23,000-song MP3 collection, you'll need to organize it. For that task, I use the Swiss Army Knife of MP3 utilities, Chaotic Software's $25 **MP3 Rage**. It helps you look up and fix improper ID3 tag data, rename files based on that data, look up lyrics and album covers, find duplicates, create a catalog file (for use with a database program), move and reorganize files, and even convert MP3 files to different audio formats. Yes, iTunes can do some of this—and for most people, that's enough—but MP3 Rage does more. I find it indispensable, and anyone with a large collection of MP3s will, too.







Essential Utility Collection

A long time ago, a company called Now Software published a collection of extremely useful system-enhancement programs called Now Utilities. The package was an excellent and inexpensive way to supercharge a Mac, and most power users—including me—owned a copy.

Aladdin Systems, the purveyor of StuffIt Deluxe and Spring Cleaning, has borrowed a page from Mac history with the very cool **Ten for X**, a $50 group of utilities that improves OS X in some excellent ways. Combining the efforts of nine shareware developers, Ten for X includes 12 utilities for OS X (apparently "Twelve for X" didn't have quite the same ring). Some of the programs, such as FruitMenu, Xounds, and WindowShade X, add OS 9 features (the Apple menu, system-sound customization, and collapsible windows, respectively) that Apple removed in OS X. Others, such as Pseudo, make it easier to work under the OS X hood. There are also two file-launching applications (LaunchBar and piPop) that work very well together, a utility for printing selected text from within any program (PrintMagic X), a full-featured

continues

Gotta Have It The SliMP3 (top) blends right in with your other stereo components. MP3 Rage (middle) can perform more than 20 different tasks on songs in your MP3 collection. Ten for X's WindowShade X utility (bottom) lets you add the OS 9 collapsible window—and more—to OS X.

The Treasure Chest

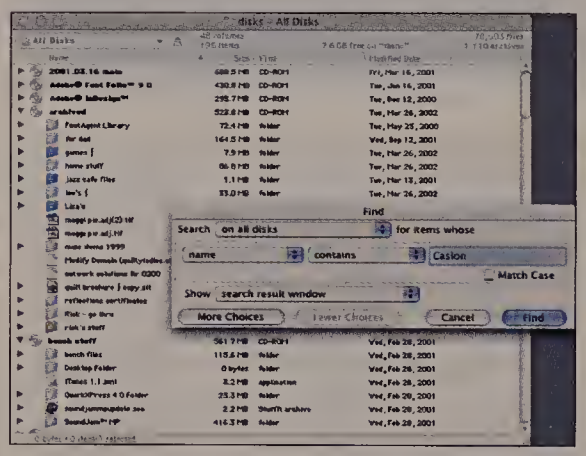
COMPANY	PRODUCT	RATING	PRICE	OS COMPATIBILITY	CONTACT
Advenio Software	MacXword 1.0.1	●●●●	$15	X	617/484-1665, www.macxword.com
Aladdin Systems	Ten for X 1.0.2	●●●●	$50	X	831/761-6200, www.aladdinsys.com
Chaotic Software	MP3 Rage 5.4	●●●●½	$25	9, X	support@chaoticsoftware.com, www.chaoticsoftware.com
open source	Gimp-Print 4.3.5	●●●½	free*	X	http://sourceforge.net/projects/gimp-print
Portents	DiskTracker 2.2.2	●●●½	$30	9, X	support@portents.com, www.disktracker.com
Slim Devices	SliMP3	●●●●●	$249	X	650/210-9400, www.slimdevices.com

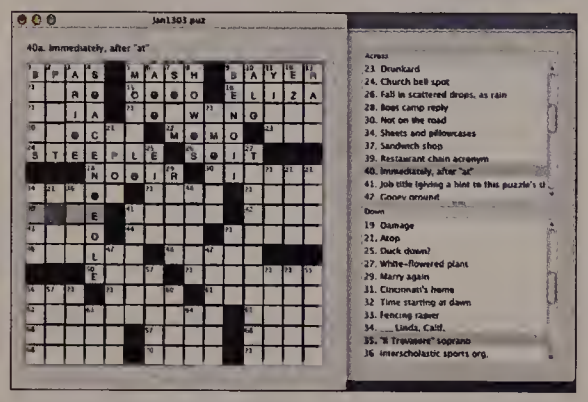
* Distributed under the GNU Public License.

alarm clock and task scheduler (AlarmClock S.E.), and a file-synchronization tool (Executive Sync).

Few people will use all of the utilities in Ten for X, but anyone who uses OS X for more than an hour a day will find three or four must-have utilities—I can't live without LaunchBar, WindowShade X, and FruitMenu, for example.

All of the Ten for X utilities are licensed from their authors and are fully functional and registered versions. They're all available individually (and you can get fully functional versions of some of them without having to pay the developer), but I think it's vital to pay shareware fees, and Ten for X delivers a hand-picked collection of excellent utilities.





Find It DiskTracker (top) makes it easy to locate files on removable disks, CDs, and other hard drives. Advenio's MacXword (bottom) lets you read and solve crossword puzzles from the *New York Times* and other papers on your OS X Mac.

OS X for Retro Printers

As the piles of printers strewn about my basement will attest, printing is a topic that's near and dear to my heart. And my heart was heavy when OS X came along, because of the problems I (and many other Mac users) had getting older printers to work with the new OS.

While we're not likely to see companies developing drivers for five-year-old printers, there is a free solution for many users with older machines. **Gimp-Print** is an open-source print driver for OS X 10.2 that supports hundreds of older, non-PostScript printers, including most ink-jets from Epson, Canon, Hewlett-Packard, and Lexmark.

Gimp-Print is fairly easy to set up, and it runs transparently once it's installed. However, you should carefully read the included installation notes several times before getting started—this *will* help alleviate potential problems down the road. (I'm not kidding.)

Gimp-Print is not a panacea. While the developers have done a great job, the driver works best when printing text and business graphics, and it won't necessarily support all of a printer's features. When I ran Gimp-Print with seven older, supposedly supported ink-jets, two of them didn't work at first, although a subsequent update fixed the problems. (Gimp-Print is constantly being updated and improved.)

You can go to the Gimp-Print support forums to see if the printer you own might benefit from Gimp-Print. The developers often hang out online to help with support issues and snag feature requests.

Keep Track of Files

While I back up my most important files with Dantz's Retrospect, I also have stacks of CDs and Zip disks with digital images, articles I've written, and tons of older applications. When I want to find a file, I don't bother rummaging through multiple CDs. Instead, I just fire up Portents' $30 **DiskTracker**, which keeps a catalog of all my media. I do a quick search and then flip through my CD holder right to the CD I need.

DiskTracker catalogs any removable media connected to your Mac. It can create catalogs for multiple discs in a batch mode, saving file information in a master catalog that's searchable by name, date, label, file type, and more. DiskTracker can also read the contents of StuffIt archives—a nice touch.

Once you've found the file you're looking for, just double-click on it in the Search Results window, and DiskTracker prompts you to insert the disc or disk containing the file. And, after you've gone to the trouble of cataloging everything, DiskTracker can print labels for almost all removable media—including CDs and floppy and Zip disks. The product even includes a simple tool for designing custom labels.

OS X Crosswords

I don't play a lot of computer games, but I do love crossword puzzles—particularly the daily puzzle in the *New York Times*. I used to do the puzzles on my Mac with Literate Software Systems' Across Lite program, but it hasn't been upgraded for OS X. So I've had to take a more old-fashioned approach lately: pencil and paper. Luckily, Advenio Software has since developed **MacXword**, an OS X application that lets you read and solve crossword puzzles based on the Across Lite format (used by the *Times* and the *Washington Post*, among others). Simple in design, MacXword offers quick puzzle navigation, printing, hints, and a clue-lookup feature that's connected to the OneAcross Web service (www.oneacross.com). At $15, it's a steal. □

RICK LEPAGE is *Macworld*'s editor in chief. Is there a utility or gadget you couldn't get along without? Send your thoughts on this column, or on things you'd like to see in future columns, to macgems@macworld.com.

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Mac Gamers, Start Your Engines

The Checkered Flag

FOR YEARS, FANS OF OPEN-WHEEL AUTO RACING WERE forced to seek out PCs or game consoles when they wanted to fulfill their need for speed. But open-wheel racing has finally come to the Mac, thanks to a Formula One simulator that's a blast to play even though it's a few years behind the times.

Vroom, Vroom With F1 Championship Season 2000, you can careen down European tracks at hundreds of miles an hour—without risking nasty auto-insurance bills.

Start Your Engines

The game in question is MacPlay's F1 Championship Season 2000—developed for the PC by EA Sports and ported to the Mac by Feral Interactive—and the results are great.

In the game, you can take on the role of a real-life Formula One team member, or even a real-life driver of one of those open-cockpit rockets. Among the identities you can assume are Team McLaren's Mika Hakkinen and David Coulthard, and Ferrari's famed Michael Schumacher. You also get to race on simulations of the venues where actual Formula One races take place, with realistic and changing weather conditions, too.

No proper driving game would be complete without dozens of settings for your car's performance, and here F1 Championship Season 2000 doesn't disappoint: everything is up for grabs, including your car's aerodynamic characteristics, suspension, tires, gear ratio, and more. Once you've tweaked to your heart's content and are happy with your car's performance, you can save those custom settings for later reuse. But if you find that the individual tinkering decisions become overwhelming, you can fall back on a series of preset options.

Getting a Formula One race car around the track requires precision and control. The cars' power and low center of gravity make them corner hard and blast on straightaways like bullets from a gun, so it's vital to not let your concentration lapse for even a second, lest you be overtaken by other drivers. A single spinout is a good way to end your chances of winning a race—even braking at the wrong time or failing to shift at the right time can mean the difference between first and second place. The twists and turns of the tracks offer a lot of challenges, too: this isn't left-turn driving around an American-style racing oval.

To prepare you for the challenges that await in Grand Prix and full-on championship racing, F1 Championship Season 2000 lets you learn the ropes in a Driving School module, test runs, and one-off races. I heartily recommend taking advantage of the training—it will make you a better driver.

If you want to make things easier on yourself, you can turn on computer assistance for driving, braking, and shifting. (This is also helpful for young drivers, as long as they know that they're not supposed to drive the family car with the same gusto they whip around a hairpin turn with.)

F1 Championship Season 2000 supports steering-wheel controllers for added realism. It also works with OS X 10.2.3 and later to add force feedback to Immersion TouchSense–compatible controllers. To get the force feedback, you'll need to download the 1.0.1 update, available online.

> The twists and turns of Formula One tracks offer plenty of challenges.

If you get bored racing against the computer, you can take on other players online—the game supports peer-to-peer connections through TCP/IP. It requires a pretty low-latency connection to work well; someone else on your local area network would be ideal.

Now the bad news: F1 Championship Season 2000 unexpectedly quit on me more than once, making it far from the stablest game I have in my library. The first time I ran the game, it used display settings that generated an ugly, blocky mess on my screen. Customizing the extensive display settings with

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(s03)

higher detail levels helped improve the look of the game dramatically without causing huge drops in the frame rate. If you're disappointed with how the game or its demo version looks when you first start it up, try tweaking the display settings.

As the game's name makes clear, F1 Championship Season 2000 is based on software that's a few years old. The graphics and sound effects are still fresh, and the game's system requirements are modest enough to include many iMac users in the race. That's all well and good, but we'd be remiss if we didn't mention that the 2002 version of this game is already available for the PC, and that the PC version of F1 Championship Season 2000 costs only a fraction of the Mac equivalent's price. Mac race fans have to hope that Feral can close the gap with future versions, giving Mac gamers one less thing to grumble about.

The Bottom Line Although it took its time getting here, F1 Championship Season 2000 is a lot of fun to play. It's a challenging and great-looking racing simulator that's sure to please anyone who's been waiting for a good Mac auto-racing game.

F1 CHAMPIONSHIP SEASON 2000

RATING: ♦♦♦

PROS: Extensively customizable; real Formula One teams, drivers, and venues; force-feedback support.

CONS: Somewhat crash-prone; dated.

PRICE: $50

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: MacPlay, 214/855-5955, www.macplay.com

Mighty Magical Heroes of Might and Magic IV may look like Caesar or Civilization, but at heart it's still a role-playing game.

Swords and Sorcery

Heroes of Might and Magic is one of the longest-running role-playing computer-game franchises, a series that traces its origins back to the days of the Apple II. Now 3DO has released the fourth major installment of the turn-based strategy game for the Mac, Heroes of Might and Magic IV, and it's a significant departure from its predecessors. A new game engine and different rules bring about some notable changes that will appeal even to die-hard fans of the series.

In Heroes IV, you lead heroes and masses of soldiers into battle against unmerciful foes as you explore terrain; put necessary resources under your control; and add to your powers by collecting precious items, magical weapons and tools, and more. While the isometric graphics may give you the impression that this game is similar to Civilization III or Age of Empires, it's not. Instead, the emphasis here is on developing the abilities of your heroes as their experience increases, much like the development of characters in traditional fantasy role-playing games.

Heroes IV also has delightfully detailed story lines in its *scenarios* (individually playable levels) and in a multimission campaign that will provide you with dozens of hours of play. But focusing on the improvement of hero talents can work against you if you're playing a scenario that doesn't offer such improvements. In those scenarios, you'll just have to play the cards you're dealt.

The game's designers have tried to free players from the micromanagement that was necessary with earlier installments of this series, but Heroes IV's many different screens and resource-management interfaces can be daunting. I strongly suggest that new players take advantage of the game's tutorial to learn the basics of play. I'd also recommend that even people who never read instructions read the manual, which gives clear explanations of how different game elements work. Unfortunately, that manual hasn't been updated for Mac users; at one point

continues

HEROES OF MIGHT AND MAGIC IV

RATING: ♦♦♦

PROS: New graphics engine; new rules; deep story lines; mission editor.

CONS: Slow combat engine; confusing sound effects; Windows-based documentation.

PRICE: $50

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: 3DO, 800/336-3506, www.3do.com

it tells readers to review the Microsoft Windows tutorial.

While you'll see plenty of action during combat, Heroes IV is suitable for all audiences (there's no blood-and-guts imagery). Don't think this is a kids' game, though—it's tough work, even for experienced game players.

Heroes IV isn't without flaws. The game seems particularly poky during computer-controlled player-combat sequences, and while there's a Quick Combat option that makes battles happen instantaneously, it takes away much of the fun of directing your troops in battle. Sound effects and music are rich and well produced, but they occasionally get in the way of the game: I found that the myriad effects for different objects on screen sometimes created a cacophony that made it hard to figure out what was going on.

If you tire of the campaigns included with Heroes IV and the separate scenarios grow tedious, you can play online against other Mac gamers via the GameRanger network-play system or direct connections. An included editor also lets you craft your own scenarios and campaigns.

The Bottom Line Expanded roles for heroes, broader specialization options, and detailed stories make Heroes of Might and Magic IV an interesting, albeit flawed, addition to the series.

¡Vámanos!

A popular television show aimed at preschoolers, *Dora the Explorer* is about a backpack-toting young girl who likes to go on adventures with her talking monkey, Boots. Now here comes Infogrames Entertainment's Dora the Explorer: Backpack Adventure.

Dora and Boots, along with Dora's anthropomorphic backpack and map, have to return books to the library, and it's up to you to help them get there. Along the way, they meet and help friends—such as Benny the bull, Isa the iguana, and Tico the squirrel—while doing their best not to upset nasties like the Grumpy Old Troll and Swiper, the sneaky fox.

One of the TV show's trademarks is its use of Spanish, and this is echoed in the game. Backpack shouts "*¡Delicioso!*" when you feed him a book, and Dora sings her theme song, "Come on! *¡Vámanos!*"—it's a nice, unintimidating introduction to Spanish vocabulary for some players, and it'll make kids growing up in bilingual families feel right at home. But this game isn't a Spanish-language tutorial—the bilingualism is just a bit of added flavor.

¡Ay Caramba! In Dora the Explorer: Backpack Adventure, Dora and her friends explore the countryside in bilingual fashion.

Game activities emphasize basic skills such as pattern and shape recognition—to make the troll let Dora pass, for example, kids must match shapes to cutouts. Understanding that preschoolers have limited attention spans, the game's designers have included an Adventure mode that unfolds like an episode of the show, as well as a free-play mode. Other activities encourage kids to use the mouse, recognize and match

continues

DORA THE EXPLORER: BACKPACK ADVENTURE

RATING: ♦♦♦½

PROS: Free-play and Adventure modes offer varied game play.

CONS: Poor audio quality; sequences you can't skip through.

PRICE: $20

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Infogrames, 425/951-7106, www.funkidsgames.com

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numbers, and use reasoning and logic skills. As players finish each activity, they get a sticker that they can place in the Sticker Book and print.

Three different skill levels will keep kids busy for a while, too. Because of the target age range, there's a limited amount to see and do, but Dora the Explorer: Backpack Adventure will keep young fans of the show entertained.

For whatever reason, the game's audio—music, sound effects, and dialogue—sounded gravelly on my system. And in the Adventure mode, I felt put off by certain sequences I couldn't skip—this is sure to be a source of frustration for youngsters who just want to get on to the next activity rather than wait.

The Bottom Line Irrepressible and exuberant, Dora the Explorer: Backpack Adventure offers preschoolers friendly encouragement as they learn shapes, numbers, and basic reasoning skills.

The 3-D Game Pad

If you're a new gamer looking for the best game controller for first-person shooters such as Medal of Honor: Allied Assault, third-person shooters, and other 3-D games, conventional wisdom says that all you need is a good multibutton mouse and a keyboard. But now Belkin has released Mac drivers for its Nostromo n50 SpeedPad, a development that tosses conventional wisdom out the window.

The SpeedPad is a game controller specifically for the 3-D–game crowd. It's a marvelous design and its software works well—I just wish Belkin's own Mac support was a bit more comprehensive.

Unlike a game pad or joystick, the SpeedPad isn't meant to stand in for your mouse; instead, the SpeedPad replaces your keyboard as your secondary input device. Intended for use with your left hand (so lefties will probably not enjoy using it), the pad features ten primary function keys that can be programmed in three different shift states. Under your thumb you'll also find a throttle wheel and a directional pad. The net result is that you can program dozens of different commands for the SpeedPad.

The software is flexible enough to emulate keystrokes and input entire macros. This comes in handy if there's a complex series of actions you'd like to activate with just one key, such as engaging weapons or accessing inventory

items that are available only from certain windows. You can also set key-repeat rates, which is useful for those moments when you need to go into rapid-fire mode and spray the room with bullets.

Belkin already has an expansive downloadable library of SpeedPad presets designed for specific games. Alas, none of these presets can be imported into the version of the Mac software I tested, and Belkin could tell me neither when Mac-specific presets would be available nor whether the Mac software would be updated to allow the PC presets to be imported.

While this isn't an insurmountable problem, it certainly makes the SpeedPad less appealing, since you'll have to create custom settings for each game you play—an arduous, time-consuming, and frustrating task. The Mac software is well done, so let's hope that Belkin finishes the job by supporting its Mac gamers with settings files, too.

The Bottom Line By keeping your left hand stationary, you can improve performance and accuracy in 3-D games. To this end, the Nostromo n50 SpeedPad is worthwhile. Too bad its Mac support just ain't all there yet. □

NOSTROMO N50 SPEEDPAD

RATING: ●●●½
PROS: Improved accuracy and performance for 3-D–game enthusiasts.
CONS: No library of Mac game presets; no import support for PC settings.
PRICE: $20
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Belkin, 800/223-5546, www.belkin.com

MacCentral.com Senior Editor PETER COHEN has wrecked numerous high-performance automobiles—but only on his Mac.

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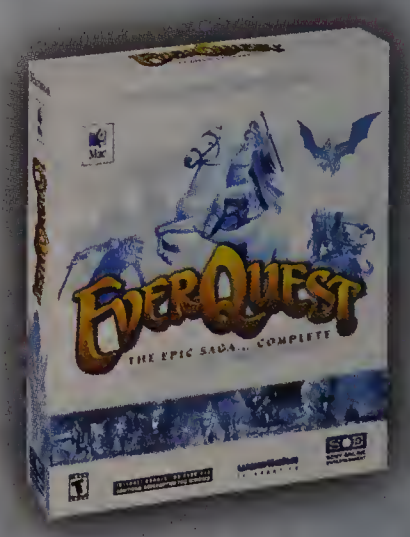

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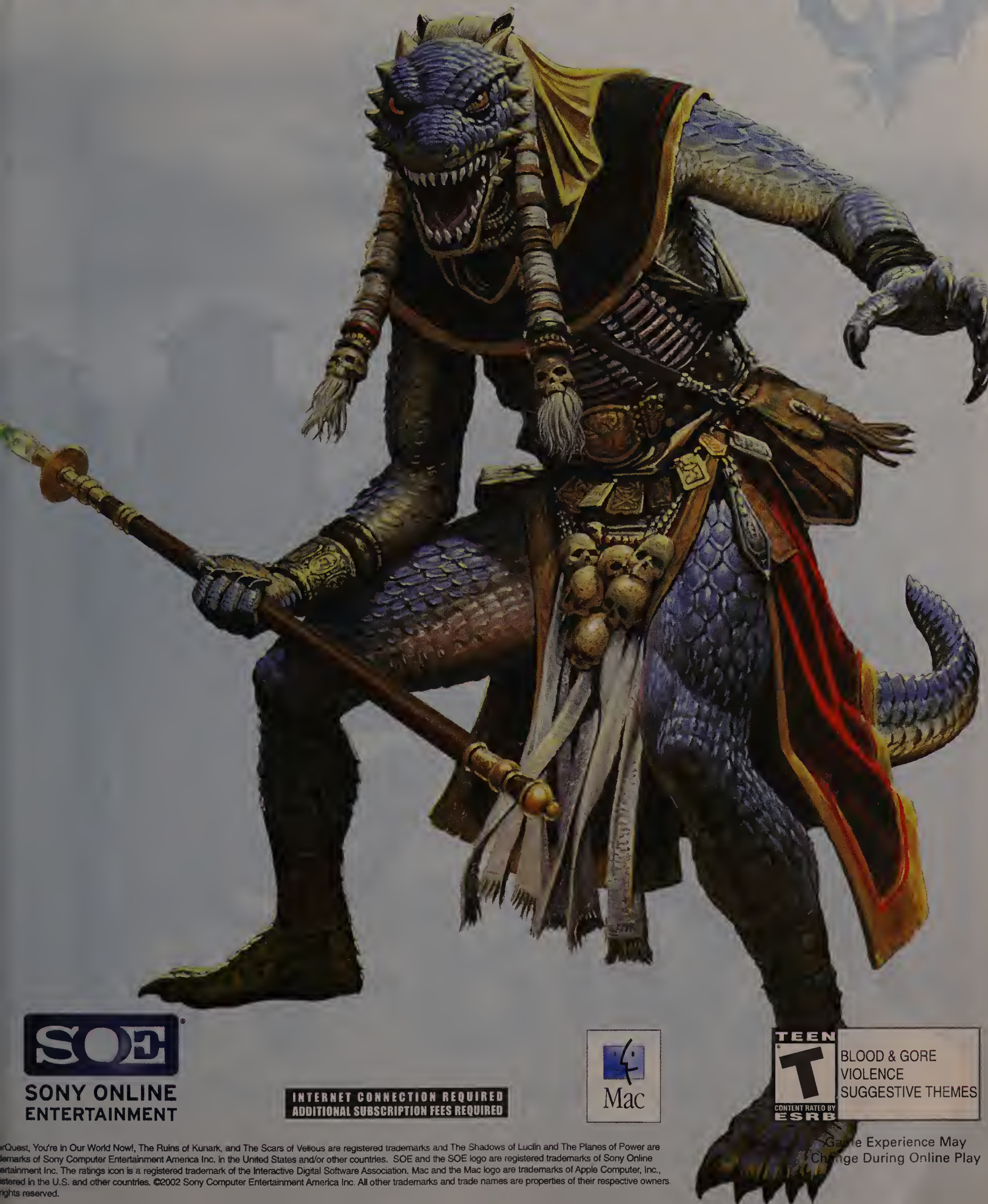

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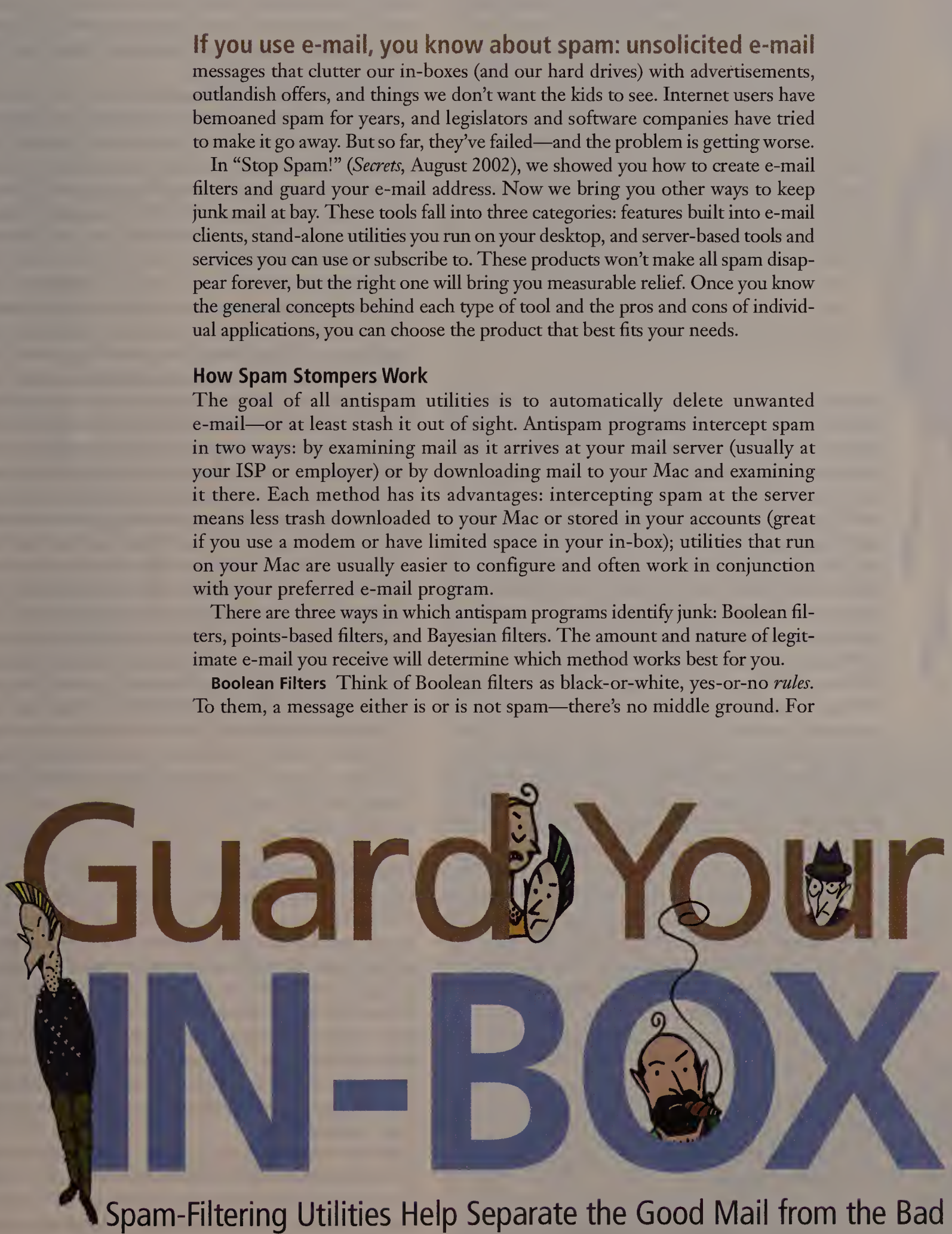


Spam-Filtering Utilities Help Separate the Good Mail from the Bad

If you use e-mail, you know about spam: unsolicited e-mail messages that clutter our in-boxes (and our hard drives) with advertisements, outlandish offers, and things we don't want the kids to see. Internet users have bemoaned spam for years, and legislators and software companies have tried to make it go away. But so far, they've failed—and the problem is getting worse.

In "Stop Spam!" (*Secrets*, August 2002), we showed you how to create e-mail filters and guard your e-mail address. Now we bring you other ways to keep junk mail at bay. These tools fall into three categories: features built into e-mail clients, stand-alone utilities you run on your desktop, and server-based tools and services you can use or subscribe to. These products won't make all spam disappear forever, but the right one will bring you measurable relief. Once you know the general concepts behind each type of tool and the pros and cons of individual applications, you can choose the product that best fits your needs.

How Spam Stompers Work

The goal of all antispam utilities is to automatically delete unwanted e-mail—or at least stash it out of sight. Antispam programs intercept spam in two ways: by examining mail as it arrives at your mail server (usually at your ISP or employer) or by downloading mail to your Mac and examining it there. Each method has its advantages: intercepting spam at the server means less trash downloaded to your Mac or stored in your accounts (great if you use a modem or have limited space in your in-box); utilities that run on your Mac are usually easier to configure and often work in conjunction with your preferred e-mail program.

There are three ways in which antispam programs identify junk: Boolean filters, points-based filters, and Bayesian filters. The amount and nature of legitimate e-mail you receive will determine which method works best for you.

Boolean Filters Think of Boolean filters as black-or-white, yes-or-no *rules*. To them, a message either is or is not spam—there's no middle ground. For

How We Tested

To research this article, we tapped into an archive of more than 250,000 spam messages received between 1993 and 2002. Seventy-five percent of the spam messages we used were collected between December 2001 and December 2002. We created sets of messages, including two sets of 10,000 spam messages—one to train Bayesian filters and another to test them.

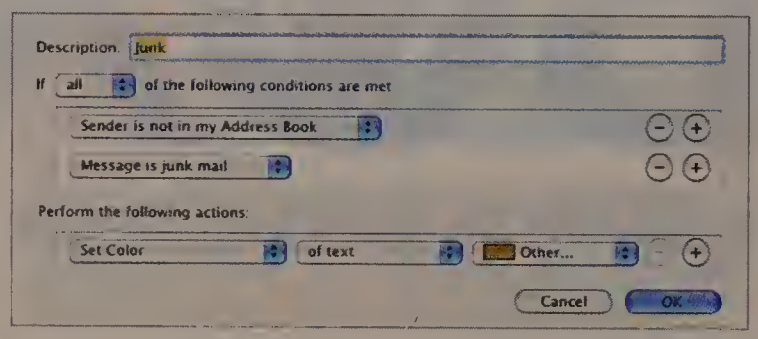
For legitimate e-mail, we used e-mail messages received between November 1997 and December 2002; one-third of the messages in each test set was from friends, family, and acquaintances; one-third was related to work; and one-third was from mailing lists. We configured the antispam programs that support whitelists or other processing exceptions for mailing lists and buddies with information for all subscribed mailing lists, as well as the e-mail addresses of everyone who appeared ten or more times in a message set. (For more details on our testing methods, see "Spam Testing Methodology," at www.macworld.com/2003/04/spamtests.html.)

instance, you can create a filter that automatically deletes any message containing the words *herbal* and *Viagra*. This filter will probably serve you well—at least until Aunt Polly writes you a letter about her garden and Uncle Theodore's new prescription.

Boolean filters are built into many e-mail applications, including Qualcomm's Eudora, Microsoft Entourage, and Netscape Communicator. They work quickly, and they're well suited to organizing mail and creating *whitelists*—the addresses (usually of friends, family, and mailing lists you subscribe to) you always want to receive mail from, no matter what that mail contains.

Relying solely on Boolean filters requires heavy input on your part because you need to create and continually maintain hundreds (or thousands) of filters to cope with spam's ever-changing permutations.

Points-Based Filters Points-based filters also apply fixed criteria to e-mail messages. But these filters aren't of the all-or-nothing variety—instead, they keep score. For example, you can set filters that assign 50 points to the word *herbal* and 50 points to the word *Viagra*; then you can tell your antispam utility to set aside messages with more than 50 points. That would make your Aunt Polly's message—at 100 points—over the limit. But because you know a little bit about your aunt's herb garden—and about her private life—you can also have a filter that subtracts 250 points from any of her messages, virtually guaranteeing that all mail from her will pass through your filter unscathed.



Spam Stopper in Your E-mail App Mail uses Bayesian technology, the current darling of spam-filtering applications. However, you can't see what criteria the program's Junk Mail filter acts on, nor can you configure it directly.

Points-based systems are more flexible than Boolean systems, but they're often slower (since all rules must be applied to all messages), and it can be tough to determine how your rules interact—you need a lot of them to account for common forms of spam. Matterform Media's Spamfire and the open-source SpamAssassin are examples of programs that offer points-based filtering.

Bayesian Filters A different approach altogether—and the latest rage in antispam technology—is offered by products such as Apple's Mail and Michael Tsai's SpamSieve: Bayesian filters make a list of every word in an e-mail message, and you tell the program whether the message is legitimate. The filter then adds that list of words to one of its two internal catalogs—"good" words and "bad" words.

As the Bayesian filter adds words, the frequency with which particular terms appear in either legitimate mail or spam trains the filter to differentiate between the two kinds of e-mail. Most Bayesian filters come pretrained to recognize common spam terms, and after you identify a few hundred good and bad messages, the filters can begin to assess whether a message is legitimate, solely by analyzing the words it contains.

Bayesian filters can adapt to new types of spam and new kinds of legitimate e-mail—when they make a mistake, you just correct them. As a result, they become highly individual, so Bayesian filters you've trained for your e-mail won't work as well for someone else. Bayesian filters often require more memory and processing than Boolean or points-based filters.

Accidents Happen No matter which filtering method you choose, the more diverse your e-mail is, the more likely it is that antispam software will produce *false positives* and *false negatives*—legitimate messages incorrectly identified as spam, and spam that gets through your filters. False positives are generally much worse than false negatives, but some people might not mind losing some legitimate e-mail in exchange for eliminating all spam.

Bandwidth and Storage

When choosing an antispam utility, you may also want to consider its impact on bandwidth and storage. Text, images, and attachments in spam have to be transmitted and received just like every other e-mail message. If you get your e-mail via a modem, those bytes add up in a hurry and go by slowly. Worse, if you have metered Internet service—where your bill is determined by the amount of data you transmit and receive—you pay to have your junk mail delivered. Some antispam utilities don't reduce the bandwidth spam takes up, and some actually increase it.

Also consider the storage spam consumes, both on your hard drive and in your account on your mail server. You can't use space occupied by junk e-mail, and if your mailbox at your ISP fills up with spam, your ISP may reject all e-mail sent to you until you delete some messages. Antispam utilities that keep

spam off your hard drive, or out of your e-mail account altogether, may be more useful to you than utilities that download it to your Mac or leave it sitting in your in-box at your ISP.

E-mail Clients

You might think that the first place to look for spam-fighting tools is your e-mail program—but although almost every e-mail program offers rules that can perform Boolean filtering, at press time Apple's Mail 1.2 and Microsoft Entourage X were the only OS X apps that promised features specifically for combating spam.

Mail The only widely used Mac e-mail client to include Bayesian filtering along with traditional Boolean filtering, Mail is easy to train: you just point out spam messages with the Junk and Not Junk buttons in the mailbox window. Once you've trained the program, Mail's Automatic mode moves suspected spam to its Junk mailbox. But make your training choices carefully—aside from repeated training, there's no way to view or modify the data Mail uses to filter junk mail.

We used 10,000 legitimate e-mail messages and 10,000 spam messages to train Mail (the number of messages appropriate for testing differs from one application to another—for test details, see "Spam Testing Methodology," at www.macworld.com/2003/04/spamtests.html), and then we asked it to filter another 20,000 messages, half of which were spam. Mail correctly identified about 75 percent of incoming spam, and it marked only two legitimate e-mail messages as spam. Mail must download messages from your mail server before applying its filters. It neither reduces the amount of time spam takes to download nor prevents junk mail from getting to your hard drive, but it does let you choose to automatically delete junk mail after a day, week, or month, or when you quit the program.

Filter Method	Boolean and Bayesian.
Accuracy	Very good: 75 percent accuracy when trained; almost no false positives.
Bandwidth and Storage	Fair: messages must be downloaded; option to automatically delete messages identified as spam.
Ideal Users	People with low to moderate amounts of e-mail who value ease of use over power.

Entourage Microsoft Entourage X offers traditional Boolean filtering and the Junk Mail Filter, which is essentially a small collection of Boolean filters and points-based rules that functions as a single unit in the program's normal mail filtering. You control the sensitivity of the Junk Mail Filter with a slider, but because there's no way to use the slider to control the sensitivity of individual rules, you gain simplicity but lose precision.

In our testing, which involved 3,000 spam messages and 3,000 legitimate messages, Entourage X's Junk Mail Filter at its most sensitive setting identified just over 18 percent of the spam messages correctly while incorrectly identifying roughly 13 percent of the legitimate messages as spam. Entourage must download your messages before it can apply filters, so no bandwidth is saved, and filtered spam stays on your hard drive unless you create a rule that deletes it automatically—which we don't recommend with filters this inaccurate.

Filter Method	Boolean and points-based.
Accuracy	Poor: identified only 18 percent of spam; flagged 13 percent of legitimate mail as spam.
Bandwidth and Storage	Fair: messages must be downloaded; spam stays on hard drive until you delete it.
Ideal Users	People with low amounts of e-mail who prefer Entourage for other reasons.

Other Tools Neither Bare Bones Software's Mailsmith nor Eudora have built-in spam filters. However, forthcoming versions of both products will offer improved integration with external spam utilities such as the ones we describe in the next section.

Client-Side Antispam Utilities

There are several antispam utilities that offer sophisticated mail-filtering features and interact with a variety of Mac e-mail clients. However, using these tools can be awkward. Because they run as separate programs, they often require that you change your filters and the way you check e-mail. Some also require that you install and use scripts. But for some Mac users, the rewards may be worth the effort.

Spamfire Matterform Media's Spamfire 1.3.2 is an add-on utility that takes over the job of checking your e-mail. Spamfire logs in to your mail server and applies its points-based rules to mail stored there. (Spamfire comes with a large set of rules, which you can add to.) The application identifies spam, downloads it to a holding area, and then deletes it from your server. Your regular e-mail program downloads the remaining messages. (Spamfire works with any OS 9

Keep Up with the Spammers

Because spammers are always changing their methods, you may want to visit the following Web sites occasionally for late-breaking information on new spam trends and ways to fight them.

CAUCE The Coalition Against Unsolicited Commercial Email (www.cauce.org) provides information on legislation and other industry news.

Spam Abuse For a wide range of general information on the mailbox scourge, and tips aimed at administrators and even marketers who want to use e-mail responsibly, visit http://spam.abuse.net.

The Spam-L FAQ This page provides a good explanation of the technical details necessary to trace and report spam: www.claws-and-paws.com/spam-l/index.html.

MacinTouch Spam and Scam Resources You can chronicle your own experiences and investigate reader reports at www.macintouch.com/spam.shtml.

Blacklist Pros and Cons

Unlike tools and services that use a message's characteristics (such as its content) to identify spam, DNS blacklists stop spam by looking up the IP number of the e-mail server trying to deliver the message. If the server's IP number is in the blacklist, the connection is rejected. DNS blacklists are used mainly on mail servers, although a few client utilities, such as PostArmor, can also use them after spam is delivered. Some common DNS blacklists are operated by Mail Abuse Prevention System (www.mail-abuse.org), OsiruSoft (http://relays.osirusoft.com), and SpamCop (www.spamcop.net). Some blacklists are available to anyone; others are fee-based.

Because mail servers refuse connections from blacklisted senders, mail from them is never sent to you and never takes up space at your ISP or on your hard drive. Nor do you have to take time to devise filters to block this mail.

But DNS blacklists are not without downsides, which usually involve the processes and criteria that determine whether an IP address is listed. Many blacklists are run responsibly and responsively, but for every advocate of a particular blacklist, there seems to be someone who claims to have been unfairly listed or who objects to its methodology. The history of DNS blacklists is peppered with interpersonal battles, lawsuits, and even cases of sites being blacklisted out of spite rather than for spamming.

And just because one user on a server sent spam doesn't mean that all the users are spammers. But a blacklist makes no such distinction, and it may block mail from innocent people.

If you're considering a DNS blacklist, be sure to research its policies, operations, and credibility beforehand. If you get mail via an ISP or other provider, consider asking which DNS blacklists they're using, if any. You might be surprised what your ISP is blocking without telling you.

or OS X e-mail program.) Spamfire supports whitelists, and since it has to check e-mail independently of your main mail program, it needs your account passwords, user names, and server information. If you want to use Spamfire with several e-mail accounts, coordinating this information between your accounts and Spamfire can be problematic.

The Pro version of Spamfire comes with 12 months of online filter updates (essential for this sort of utility). All versions include a Revenge menu with several options, such as filling spammers' server logs with useless information, which makes it hard for them to collate the data they try to gather (by using identifiable links and images in their spam). But although we understand the satisfaction that revenge can bring, Spamfire's Revenge options are unlikely to have a measurable dampening effect.

In our tests, with 5,000 legitimate messages and 5,000 spam messages, Spamfire correctly identified 76 percent of the spam and incorrectly marked less than 3 percent of the legitimate mail as spam.

But Spamfire can be hard on your bandwidth: It can download legitimate messages twice, and misidentified messages may make three trips. For more on this utility, see our review (♦♦♦½; November 2002).

Filter Method	Points-based.
Accuracy	Very good: 76 percent of spam was identified; 3 percent of legitimate mail was misidentified as spam.
Bandwidth and Storage	Poor: spam is typically downloaded once; legitimate mail, twice; and false positives, three times. Spam is stored locally, but it can be automatically deleted.
Ideal Users	People with few e-mail accounts, a high volume of messages, and bandwidth to spare.

Spam Stompers Compared

COMPANY OR AUTHOR	PRODUCT	MOUSE RATING	PRICE	CONTACT	FILTER METHOD	FILTER ACCURACY	BANDWIDTH AND STORAGE
Apple Computer	Mail 1.2	N/A[A]	free[B]	www.apple.com/macosx/jaguar/mail.html	Boolean, and Bayesian Junk Mail filter	Very good: 75 percent accuracy when trained; almost no false positives.	Fair: messages must be downloaded; option to automatically delete messages identified as spam.
Andreas Bauer (Mailfilter); Frank Blome (MailfilterX)	Mailfilter 0.40, MailfilterX 0.2.0	♦♦½	free	http://mailfilter.sourceforge.net/, www.frank-blome.de/mailfilterx/	Boolean	Not applicable: there are no default filters; configuration is entirely user-dependent.	Good: messages identified as spam are deleted from server without being downloaded.
Matterform Media	Spamfire 1.3.2	♦♦♦½	$19, $29, or $39[C]	www.matterform.com	points-based	Very good: 76 percent of spam was identified; 3 percent of legitimate mail was misidentified as spam.	Poor: spam is typically downloaded once; legitimate mail, twice; and false positives, three times. Spam is stored locally, but it can be automatically deleted.
Microsoft	Entourage X	N/A[D]	$100	www.microsoft.com/mac	Boolean, and small set of built-in points-based rules implemented as single Junk Mail Filter	Poor: identified only 18 percent of spam; flagged 13 percent of legitimate mail as spam.	Fair: messages must be downloaded; spam stays on hard drive until you delete it.
Michael Tsai	SpamSieve 1.2.2	♦♦♦♦	$20[E]	http://c-command.com/spamsieve/	Bayesian	Very good: identified 82 percent of spam; misidentified only 1 percent of legitimate e-mail.	Fair: no worse than downloading and storing mail with your preferred e-mail client, but no better.
P. Manna	PostArmor 1.2	♦♦♦	free for single account[F]	www.postarmor.com	points-based, and DNS blacklists	Good: identified 66 percent of spam messages; misidentified 8 percent of legitimate messages.	Good: downloads only message headers when filtering.

[A] N/A = not applicable. Mail's overall rating is ♦♦½ (*Reviews*, October 2002). To avoid confusion, we didn't rate its spam-filtering capabilities for this article. [B] Included with Mac OS X 10.2 and higher. [C] Lite version (no sion, $39 (free demo available). [D] N/A = not applicable. Entourage's overall rating is ♦♦♦♦ (*Reviews*, October 2002). To avoid confusion, we didn't rate its spam-filtering capabilities for this article. [E] Free demo available.

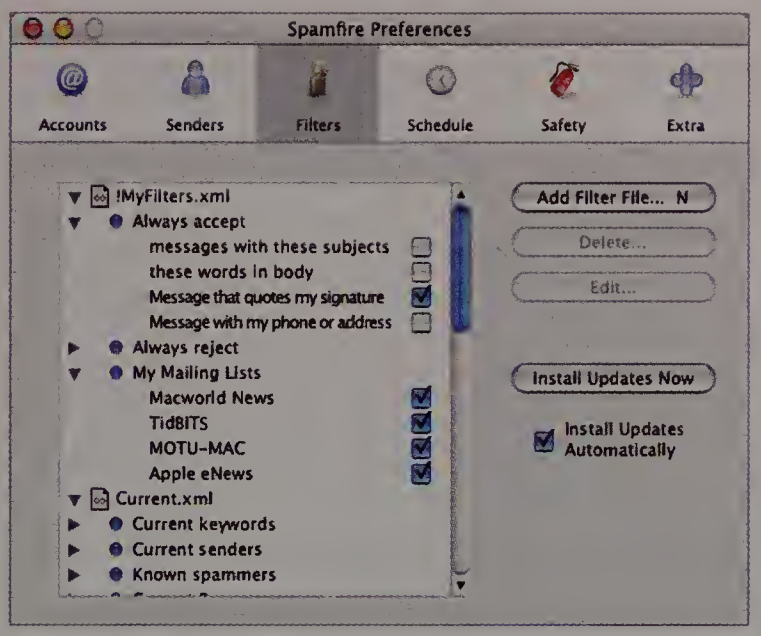
SpamSieve Like Spamfire, Michael Tsai's SpamSieve 1.2.2 works as an add-on to Entourage, MailSmith, CTM Development's PowerMail, and Eudora 5.2, but unlike Spamfire, this program lets you stay within your familiar e-mail application, so you usually don't have to change the way you manage mail to take advantage of SpamSieve. Supplied AppleScripts tell SpamSieve about good and bad messages. Once you've trained SpamSieve's Bayesian filters, the program automatically filters new mail as it comes in, and you use scripts to continue training SpamSieve about new types of junk and legitimate e-mail.

We trained SpamSieve with 10,000 legitimate messages and 10,000 junk messages. SpamSieve correctly identified just over 82 percent of the spam it received. It also misidentified almost 1 percent of the legitimate mail. SpamSieve 1.2.2 doesn't let you edit its list of words and scores, but future versions will. Version 1.2.2 does offer a pruning function to remove little-used terms, which may help SpamSieve's performance if it gets too slow. SpamSieve's documentation is weak, and integration with Eudora 5.2 is clumsy and unreliable—if you already use Eudora's filters, you'll have to edit the script of a second, helper application and rework your filtering to use SpamSieve effectively. But the difficulties are caused by Eudora's notification function, not SpamSieve.

Filter Method	Bayesian.
Accuracy	Very good: identified 82 percent of spam; misidentified only 1 percent of legitimate e-mail.
Bandwidth and Storage	Fair: no worse than downloading and storing mail with your preferred e-mail client, but no better.
Ideal Users	Power users and folks who receive a lot of e-mail.

PROS	CONS
Comes with OS X; trainable; easy-to-use interface.	Low configurability; spam still takes bandwidth and disk space.
Highly configurable; attempts to conserve bandwidth.	Effective installation and use requires technical knowledge; examines message headers, not bodies; supports only POP3 accounts.
Sophisticated, evolving rule set; support for multiple types of accounts; works with variety of e-mail clients, supports OS 9, OS X.	Difficult to audit rules; spam still takes bandwidth and disk space; spam not managed in your e-mail program.
Easy to use.	Built-in rules virtually undocumented with no way to update or modify; limited effectiveness; spam still takes bandwidth and disk space.
Works with a variety of Mac e-mail clients; trainable; supports OS 9 and OS X.	Low configurability; potentially difficult to train; spam still takes bandwidth and disk space; very awkward with Eudora.
Highly configurable; attempts to conserve bandwidth; graphical Java application for OS X and OS 9.	Effective use requires technical knowledge; examines only message headers, not bodies.

filter updates; one mailbox), $19; electronic delivery of Pro version, $29; boxed Pro ver- ' Single-server license, $15; site license, $150; worldwide license, $900.



Stand-Alone Spam Stopper Spamfire has an extensive rule set for detecting spam. You can also easily define custom rules that help legitimate mail get past spam filtering.

PostArmor A Java-based application that connects to POP and IMAP servers, P. Manna's PostArmor 1.2 applies points-based filters to the headers of mail on servers, and it can delete anything it thinks is spam. What's left is downloaded into your e-mail application. Although Java applications tended to be slow and unstable under OS 9, PostArmor works well under OS X, as long as you bring a working knowledge of *regular expressions* (a kind of text matching using wildcards, patterns, and ranges of characters instead of fixed terms). On the plus side, the program includes links to common DNS blacklists (see "Blacklist Pros and Cons"), the ability to check the validity of sender addresses by connecting to the sender's server, and e-mail reports that let you see which rules are firing and what mail PostArmor has rejected.

In our testing, with 3,000 legitimate messages and 3,000 spam messages, PostArmor correctly identified just over 66 percent of the spam, and it misidentified about 8 percent of the legitimate e-mail. However, PostArmor's performance, even on a local Ethernet network, was fairly slow: if you routinely receive a lot of e-mail, PostArmor may frustrate you. PostArmor's integration with DNS blacklists is automatic, and there's no way to selectively disable them.

PostArmor tries to save bandwidth by downloading only header information, rather than entire messages, from your mailbox. But because PostArmor's rules aren't applied to the bodies of incoming messages, obvious spam can slip through undetected. PostArmor comes with a set of predefined rules, and you'll want to add more of your own to handle the specific types of legitimate mail you receive.

Filter Method	Points-based.
Accuracy	Good: identified 66 percent of spam messages; misidentified 8 percent of legitimate messages.
Bandwidth and Storage	Good: downloads only message headers when filtering.
Ideal Users	Power users with limited Internet bandwidth and some Unix knowledge.

Protecting Your E-mail Address

If you've ever published your address on a Web page or posted to a Usenet discussion group, odds are your e-mail address has been scooped up by an *address trawler,* a program that scans Web pages and newsgroups for e-mail addresses. Spammers collect and use these addresses, and they sell them to other spammers.

Protecting your address is largely a matter of staying under the radar of such address-harvesting tools. Here are some ways to avoid detection:

Don't publish your e-mail address on a Web site, in directories, or in other public forums.

Don't include your e-mail address in any mailto: links.

Don't put your e-mail address in your signature.

Don't enter your e-mail address into Web forms unless you trust the organization running the site and they have a legitimate need for your address. And even if that's the case, read the site's privacy policy to see whether it shares or rents address lists—and stay clear if it doesn't have a privacy policy.

Don't use opt-out or unsubscribe links in spam. If they work at all, they only confirm that your e-mail address is valid and ripe for more spam.

Web-Site Contacts If you don't put your e-mail address on your Web site, how can people contact you? Although there's no single solution for every situation, there are some strategies:

Put a contact form on your Web site. For people who don't know how to create one, most ISPs provide templates. Just be sure to examine the HTML. If it contains your address (even as a hidden item), ask your provider for a form that doesn't spell out your entire address.

Make a small image that displays your e-mail address. Don't add a mailto: link. The downside: visitors without graphics capability (users with old browsers, cell phones, and so on) and people with visual impairments may miss the information.

Write out your e-mail address using full words: geoff (at) example (dot) com. This may confuse some trawlers—though spammers are beginning to catch on to this technique.

Use JavaScript tricks to obscure your address by encoding it or breaking it into unrecognizable chunks. (Check out Matterform Media's SpamVaccine [www.matterform.com] or simpler scripts that are widely available [see www.joemaller.com/js-mailer.shtml].) However, these work only if your visitors' browsers support JavaScript, and spammers are starting to figure out this trick, too.

MailfilterX Frank Blome's MailfilterX 0.2.0 adds an OS X interface to Mailfilter 0.40, a Unix utility that can log in to POP accounts. It applies a series of Boolean filters to mail and deletes messages identified as spam from the server. Mailfilter supports whitelists and regular expressions. It can also normalize subjects (so it recognizes "f-r-e-e" as the word *free,* for example), remove duplicate messages, and filter messages by size.

Mailfilter deletes spam from your server's mailbox while downloading as little as possible. Mailfilter is not for those wary of OS X's Terminal application; although MailfilterX puts a bit of a friendly face on the text-based Mailfilter configuration file, you'll need Unix and regular-expressions skills to get Mailfilter running and configured meaningfully. Neither Mailfilter nor MailfilterX ships with a default filter set (although some samples are provided), so we couldn't test out-of-the-box effectiveness: you'll have to write your own rules and hope they're successful.

Filter Method	Boolean.
Accuracy	Not applicable: there are no default filters; configuration and filter management are entirely user-dependent.
Bandwidth and Storage	Good: messages identified as spam are deleted from the server without being downloaded.
Ideal Users	Technically savvy people who have Unix experience and who want to filter e-mail on their mail server.

Server-Side Utilities and Services

Your desktop isn't the only place to combat spam: many ISPs and organizations can block or label unwanted e-mail before it leaves their servers. Server-side spam filtering can be great for saving bandwidth and keeping your e-mail account within its file-size limit, because spam blocked by the server is never delivered to your account. And you don't have to manage the antispam utility: its care and maintenance are the responsibility of the folks who run your mail server.

But server-side spam filtering has its faults. Generally, server-side tools are much less configurable than antispam utilities running on your Mac. You may be able to adjust the sensitivity of some features, but you usually won't be able to see the rules the server applies to your mail, let alone enable and disable them to meet your needs. Also, you may have no indication that e-mail was blocked: while some systems can shunt potential spam to a Web-based holding area (which you must regularly review for misidentified spam), other systems don't notify you of blocked mail.

Though server-side filtering is not for everyone, it's a great option in some circumstances. Your ISP or mail provider may already offer some server-side spam-fighting tools, or you may want to set an address with a provider that offers spam-protected addresses. Check out "Server-Side Utilities and Services" at www.macworld.com/2003/04/features/serverside/ to see how antispam tools Postini, BrightMail (the brain behind Earthlink's Spaminator), and SpamAssassin stack up to protected forwarding addresses from Pobox and SpamCop.net.

The Last Word

There's no way to completely dam the flow of unwanted e-mail into your in-box, but the newest breed of spam-fighting tools can at least help you manage the flood. Choose a filtering program that fits the way you work, and you'll have more time to deal with the ever-rising tide of *genuine* e-mail that requires your attention. □

GEOFF DUNCAN is the technical editor of the free weekly Macintosh newsletter TidBits (www.tidbits.com).

(it's not a hard drive)

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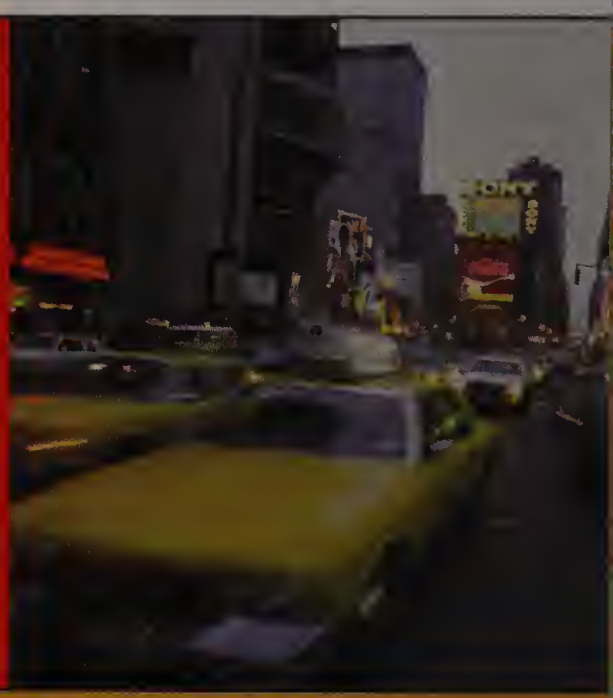

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www.macworld.com/2003/04/reviews/itunes3/
Although iDVD, iMovie, and iPhoto are the apps with the newest versions, we wouldn't want to forget iTunes. Visit our Web site to read our review of iTunes 3, and while you're there, pick up some tips on how to get the most out of the program—as well as how to do some things you may not have known you could do.

ILLUSTRATION BY RICHARD TURTLETAUB

iPHOTO 2

iPhoto 2 may turn out to be the most welcome of the iLife upgrades, since iPhoto 1.1—though it was functional—had frustratingly poor performance, no proper integration with the other i-apps, and clumsy keyword features. Although iPhoto 2 has some stability problems, many of the flaws in iPhoto 1 have been fixed, and a few new features make version 2 a must-have for current iPhoto users.

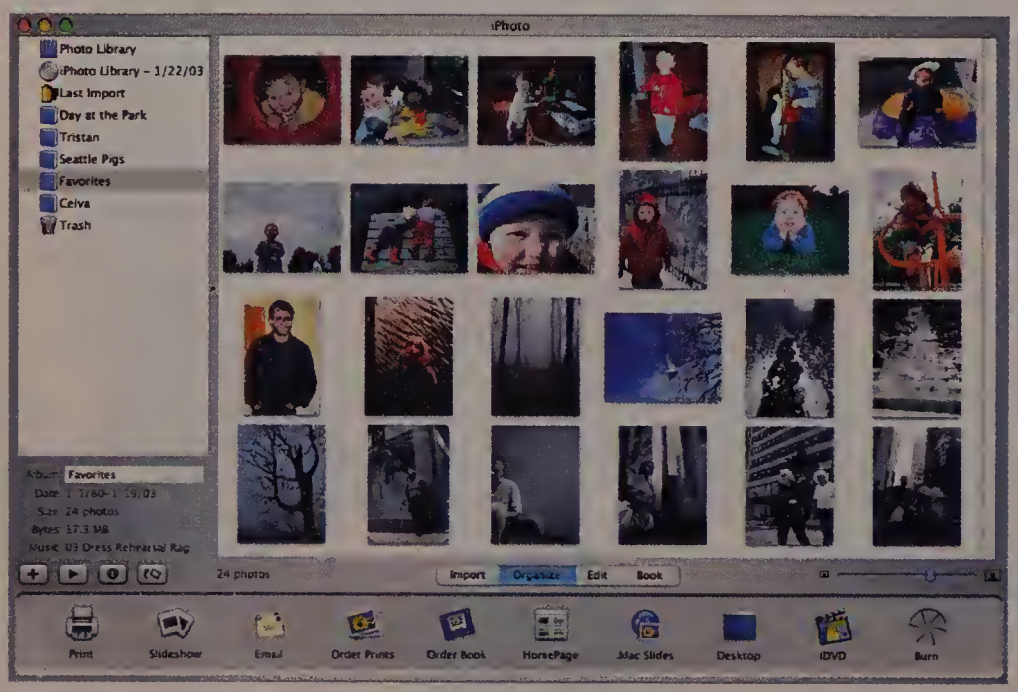
Better, Faster Organization

The most visible change to iPhoto is the new Keywords window, which makes this version's interface much easier to use. It also allowed Apple to move the sharing tools into the Organize tab and eliminate the Share tab entirely. But we would have liked a programwide search tool similar to the one in iTunes.

Also new is a Trash album that holds snapshots deleted from your Photo Library. You can restore mistakenly trashed photos by dragging them back to the Photo Library album or by choosing Restore To Photo Library. An Empty Trash command deletes photos for good.

iPhoto retains its chronological approach to storing photos in the iPhoto Library folder in your Pictures folder. Although you can now select multiple albums at once, there's still no way to have hierarchical albums in which you could, for instance, keep all your vacation photo albums together. But iPhoto 2's new archiving capabilities for backing up photos to CDs or DVDs should help you organize your permanent collection and minimize the worry that photos controlled by iPhoto could become inaccessible. (Users hoping that iPhoto 2 would let them store photos anywhere on their hard drive will be disappointed.)

Generally, iPhoto 2 seemed somewhat faster than its predecessor. It tries to load images in advance, to increase responsiveness when you're switching between different full-window photos. However, many activities—including resizing the main iPhoto window, calculating disc space before burning a CD, and changing the thumbnail size of thousands of photos—remain choppy, even on a dual-1GHz Power Mac G4. And OS X's spinning beach-ball cursor still makes frequent appearances.



Slightly Tweaked iPhoto 2 looks a lot like its predecessor, but its sharing tools are now under the Organize tab, and archived discs now appear in the Album pane.

Photo Fixing

Although iPhoto's editing tools will never compete with those of programs such as Adobe Photoshop, iPhoto 2 does include two useful new editing tools: Enhance and Retouch. (For more-powerful editing capabilities, you can still set iPhoto to open an image in another application when you double-click on a photo.)

Enhance The Enhance feature tries to solve color and contrast problems. For example, if your flash gives everything a bluish tint or fails to illuminate backgrounds properly, you can adjust an entire photo's look automatically with the click of a button. We found that Enhance was functional but not a complete success. It did a good job with most of our photos, making images a bit more vibrant. But when we tried to improve some photos of a track meet, Enhance blew it—everything in one image turned the color of the red clay track. When we cropped another photo and then used Enhance, all the people in the image turned a shade of green—though the image looked fine if we used Enhance before cropping.

Retouch More welcome is the Retouch tool, which lets you make it seem that your toddler wasn't wearing a pea-stained bib when you snapped an otherwise amazing photo of her. Just click on Retouch and scrub over the offending blemish to replace it with blended color from adjacent areas. Retouch worked well in our testing, as long as the area being fixed wasn't too large or too different from the surrounding area.

Integration

The highest-profile changes in iPhoto 2 involve integration with iTunes and iDVD. When you're creating an iPhoto slide show, you can now easily access your iTunes playlists and give it a soundtrack. Unfortunately, iPhoto still can't play more than one song per slide show.

iPhoto's integration with iDVD allows you to quickly move your iPhoto slide shows (albeit without iPhoto's snazzy transitions) onto DVDs that can play in any DVD player. This is a great way to send a lot of photos to friends or relatives, who can then enjoy your photos on a TV screen.

Printing

iPhoto 2 offers two new print templates: N-Up, which prints a user-specified number of photos on a page, and Sampler, which lets you choose between two templates that print several photos at different sizes on a single page (however, it isn't customizable). iPhoto 2 can also print 2-by-3-inch prints for carrying around in a wallet, but there's still no way to add text to greeting cards printed from iPhoto.

Outside iPhoto

With iPhoto 1.1, you couldn't use e-mail programs other than Apple's Mail without a third-party utility. With iPhoto 2, you can use America Online, Microsoft Entourage, and Qualcomm's Eudora—as well as Apple's Mail. (Since iPhoto supports only a limited number of e-mail applications, you have to select yours from the list in iPhoto's preferences—the program does not pick up the default e-mail reader selected in the Email tab of OS X's Internet Preferences pane.)

Gone is iPhoto's Screen Saver button; confusingly, a Desktop button sets the chosen album both as your screen saver and as a rotating, slide-show desktop picture. Although the screen saver can display pictures on two monitors, you must set the Desktop picture for the secondary monitor manually.

Moving Your Photos Around

Especially gratifying is iPhoto 2's ability to burn photos to CDs and DVDs, which can be used as backups or as a means of sharing with other iPhoto users. When you insert a CD or DVD that was burned in iPhoto, it appears as a new Library in your Album pane, and you can view and copy snapshots from it (the photos are stored in the same chronological hierarchy as on your hard drive).

Exporting to a CD or DVD may be the best way to transfer a lot of pictures from one Mac to another, since iPhoto 2 doesn't offer any way to synchronize iPhoto libraries on two machines. It would be nice to be able to easily transfer photos from the iBook you brought with you on vacation to your Power Mac at home.

iPHOTO 2

RATING: 4 mice

PROS: Useful new editing tools; streamlined interface; enhanced integration; CD and DVD archiving.

CONS: Only one song allowed per slide show; limited printing capabilities; cannot merge iPhoto libraries between two Macs or share iPhoto libraries among multiple users; some stability issues.

PRICE: download, free; as part of the iLife package, $49

OS COMPATIBILITY: Mac OS X

COMPANY: Apple Computer, 800/692-7753, www.apple.com

iPhoto's integration with the .Mac service's HomePage feature is essentially unchanged, but iPhoto 2 can upload photos to your iDisk as a .Mac slide show, and anyone using Jaguar can then use that slide show as a screen saver. And finally, if you want to extend iPhoto's capabilities, you can do so via AppleScript (see "iPhoto 2 Tips and Tricks" for more on AppleScript).

Macworld's Buying Advice

iPhoto 2 is a free download from Apple's Web site, although you can avoid the lengthy download time by buying the $49 iLife suite, which includes iPhoto 2, iTunes 3, iMovie 3, and iDVD 2—this option makes even more sense if you need the iDVD update, which is available only on the iLife DVD. If you're already an iPhoto user, iPhoto 2 is a shoo-in; you'll appreciate its improvements (though you'll likely be left wanting more of them). If you currently use other photo-editing and -cataloging programs, you may not find the changes reason enough to warrant changing programs.—ADAM C. ENGST

iPHOTO 2 TIPS AND TRICKS

Photograp

Although most of iPhoto's features are relatively obvious, a few keyboard and AppleScript tricks can make iPhoto even easier to use.

Optional Behaviors In a number of situations, holding down the option key changes the behavior of a feature in iPhoto. To rotate a photo in the opposite direction from the default, option-click on the Rotate button. When cropping, you can switch from a portrait aspect ratio to a landscape aspect ratio by holding down the option key as you're dragging a selection rectangle. To open a photo for editing in a separate window when the default is to edit in the main window, option–double-click on the photo. To switch to an album *and* to toggle between Organize mode or Book mode, option-click on the album. And double-clicking on a keyword in the Keywords window searches for that keyword (even if it was used only in the title or comments of a photo); to assign that keyword to selected photos, option-double-click on it.

Control Freak Another neat trick involves the control key. If you edit a photo in any way and then press control, iPhoto will show you how the photo looked before the edit. Release the control key, and you see the changed version again.

Quick Culling The beauty of digital cameras is that you can take a lot of bad photos while trying to capture that great one. For a fast keyboard-only method of culling the discards in iPhoto after importing them all, switch to Edit mode, use the arrow keys to move between photos, and then press the delete key to send a lousy snapshot to iPhoto's Trash. This technique doesn't work in Organize mode, even when you're viewing only a single thumbnail at a time, because iPhoto loses track of the selection after you delete a photo, forcing you to click on the visible photo before the arrow keys work again.

Keyword List When you're creating new keywords, be careful about what you select. iPhoto 2 creates new keywords underneath the selected keyword. If that's not where you want the new keyword in the list, you must delete and re-create it; there's no other way to rearrange keywords.

AppleScript Unlike its predecessors, iPhoto 2 supports AppleScript, so you can integrate iPhoto with other applications and even add features that iPhoto doesn't support on its own. Apple has posted a collection of sample scripts at www.apple.com/applescript/iphoto/ to get you started. Among the samples are scripts that automatically apply a Photoshop action to a photo and scripts that generate an HTML summary of selected iPhoto images. Expect exchanging data between iPhoto and other image-cataloging applications, such as iView MediaPro, to get easier—it shouldn't be too long before you'll be able to transfer photos, keywords, and comments back and forth at will, all thanks to AppleScript.—ADAM C. ENGST AND JASON SNELL

iMOVIE 3

It's been two years since Apple last revamped its easy-to-use video-editing application, and for many users, it looks as though the company's time has been well spent. iMovie 3.0.1 sports a number of deep enhancements, and the program benefits immensely from integration with the rest of the iLife suite.

iMOVIE 3.0.1

RATING: ★★★½

PROS: iDVD chapter support; animated still images; iLife application integration.

CONS: Ken Burns Effect presets can lower productivity; limited audio preview features; sluggish behavior.

PRICE: download, free; as part of the iLife package, $49

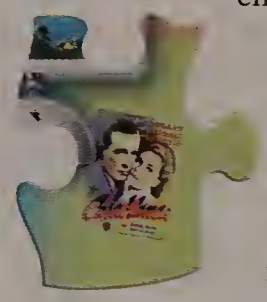
OS COMPATIBILITY: Mac OS X

COMPANY: Apple Computer, 800/692-7753, www.apple.com

Refined Interface

From the outset, iMovie 3 presents a more refined, yet still familiar, interface. Instead of taking over your entire screen, the application's contents reside inside a single resizable window—especially great news for users with large monitors who want access to the rest of their screen real estate. The iMovie monitor, Clips pane, clip viewer, and timeline viewer remain in the same relative positions.

The way you work within the clip viewer is much like it was before—but now when you drag a piece of video from the Clips pane into a sequence, the other clips fluidly make room for the newcomer.



iMovie 3's difference is more apparent in the timeline viewer, where a new and very useful option called Edit Volume lets you adjust volume throughout a clip to create audio fade-ins and -outs, cut unwelcome noise, and boost weak voices.

However, we did find that iMovie 3 was noticeably sluggish in some cases, including when we edited projects converted from iMovie 2, pressed the spacebar to begin playing a clip, and first opened a project. iMovie 2 users on slower systems should upgrade with caution.

Integration

iMovie 3's expanded iMedia Browser is where iMovie and the rest of the iLife apps interact.

iPhoto Pressing the new Photos button displays the contents of your iPhoto 2 Photo Library. You can easily grab photos from iPhoto and slide them into your timeline, or you can animate them with the new Ken Burns Effect tool. Named after the documentary filmmaker behind *Jazz*, *Baseball*, and *The Civil War*, the Ken Burns Effect is a powerful feature that lets you zoom into and pan across still images. To use it, establish the position and size of the image at the start of the clip and then set the position and the size for the end—iMovie animates the in-between movement. Unfortunately, iMovie applies the same settings to all subsequent still images you add to your sequence; this isn't helpful because you'll rarely want to animate two images in exactly the same way. It would be more logical—and reduce mouse-clicks—if iMovie's default photo treatment was a standard still image. To make matters worse, it's not easy to turn the Ken Burns Effect off. There isn't a reset button for the effect. To turn it off, you need to load the clip into the Ken Burns Effect window and set the Start and Finish points to a Zoom value of 1.00.

Chapter and Verse One of iMovie 3's best new features is the ability to create chapter markers that carry over to iDVD 3.

iTunes Next in the iMedia browser is the Audio button. Pressing it reveals a pane that gives you access to your entire iTunes Library, as well as an expanded set of sound effects. While this is a helpful element, the interface is clunky—there's only a Play button for previewing music and sound. This forces you to preview the audio clips in real time from the start, which can be very annoying with long clips.

iDVD In iMovie 3's iDVD pane, you can set chapter markers at logical breaks in your project, giving viewers the option of skipping ahead to particular scenes while they're watching your movie on a DVD created in iDVD 3. To create a chapter marker, place the playhead on the timeline, click on the Add Chapter button in the iDVD pane, and name the chapter.

When you've finished editing your project, you can transfer the project to iDVD just by choosing Create iDVD Project—you no longer need to perform a lengthy QuickTime export of your movie, and the transfer to iDVD 3 takes only a few moments.

Welcome Changes

Beyond the marquee features, there are a few other new touches that make iMovie 3 even more of an impressive update.

Special Effects iMovie 3 includes an expanded set of video effects with filters such as Aged Film, Fairy

Dust, Ghost Trails, and Earthquake. These filters take iMovie one step closer to its more-professional counterparts. The Title tool has similarly been updated with additional settings.

Video Import Click on the Clips button, and you'll see the familiar Clips pane, which stores and catalogs recorded video elements. But now you can import all sorts of different clips into the pane, instead of just footage from a DV camcorder. iMovie 3 lets you import any QuickTime movies (provided that the resulting clip is less than 9 minutes, 57 seconds in length—a 2GB file-size limit). You can drag them into the Clips pane or choose Import from the File menu. Either way, you can easily import DV clips from Final Cut Pro or AVI movies from your digital camera into iMovie.

Macworld's Buying Advice

iMovie 3 is a significant upgrade to Apple's easy-to-use video-editing program. iMovie benefits greatly from integration with all the other iLife applications, both in terms of easy access to source media and easy links to iDVD for disc burning.—ANTON LINECKER

iMOVIE 3 TIPS AND TRICKS

These tips will help you overcome the limitations of the Ken Burns Effect and use iMovie's new audio tool.

Controlling Ken The Ken Burns Effect animates still images between the beginning and end of a clip, but the image is in constant motion. Often, constant motion is all you need, but sometimes you don't want the image to begin moving immediately at the cut—or you may want to hold on an image after the animation is done. Indeed, in many of Ken Burns's documentaries, a pan or zoom will stop on an image to emphasize its importance.

To hold on an image before the animation starts or after it ends, you need to treat the animation and the still images separately. First, apply the Ken Burns Effect to an image and add it to your timeline. At this point, you have a clip with different pan and zoom positions for the beginning and the end. If you want the animation to start on a still image, position your playhead at the beginning of your animated clip. Choose Create Still Image (shift-⌘-S). This creates a still image in the Clips pane. Insert the still image ahead of the animated clip, and choose the amount of time you want the still image to linger.

If you want to end the animation with a still frame, choose the animated clip in the sequence and place the playhead at the tail of the clip. Again, create a still image and drag the new still from the Clips pane to your timeline after the animated clip.

Volume versus Volume When iMovie is in timeline mode, you'll see two volume sliders—one above the timeline and one underneath. Although they look identical, they actually do very different things. The slider above the timeline is a permanent fixture in iMovie that controls the computer playback volume. The second volume slider appears only in the timeline window—it's the clip volume control. To activate the slider, click on the Edit Volume button.

To adjust a clip's audio, click on the section of the clip you want to adjust and either drag the marker (also known as a keyframe) up or down, or move the slider. This way, you can reduce the volume of background music when you want to hear someone speaking in your movie, for example, and you can make as many adjustments as you like.—ANTON LINECKER

iDVD 3

iDVD 3 is a shining example of elegant simplicity—it lets you build complex, professional-looking DVD projects with ease. It has limitations, to be sure (for example, it doesn't support external DVD burners—it works only with Apple's internal SuperDrive), but most casual DVD creators probably won't notice them. This massive (1.3GB) upgrade is what you're really paying for when you buy iLife.

Themes

iDVD 3 includes two dozen new customizable DVD menu themes to choose from (and you won't lose your version 2 themes either). These new themes, such as Theater and Projector, are simply dazzling. Many of them have a *drop zone*—areas where you can customize Apple's prebuilt backgrounds by dropping in your own photos or video clips.

In the Projector theme, for instance, the drop zone corresponds to the movie screen lit by a film projector. When you drop video into this zone, iDVD plays the video back as if it were projected film, adding some scratches and dirt with an old-film–look filter. The only drawback to the drop zone is that the video or photo album plays back with a constant framing—although you can click and drag the video to the desired placement, the adjustment is applied throughout. As a result, some photos in an album may appear awkwardly framed. In addition, tall photos are sometimes incorrectly displayed (squished vertically, for example).

Integration

The way you work with iDVD is basically the same in version 3. But new features can add a layer of sophistication to finished projects.

iTunes iDVD 3 accesses the other iLife apps through the iMedia Browser, which is located at the top of the Customize drawer. Pressing the Audio button opens the iTunes Library, letting you easily pull audio in for background music (you can still import non-iTunes audio the traditional way, via the Customize: Settings pane). Any sound element imported from iTunes starts playing from the beginning by default (and menus can only contain a 30-second music loop).

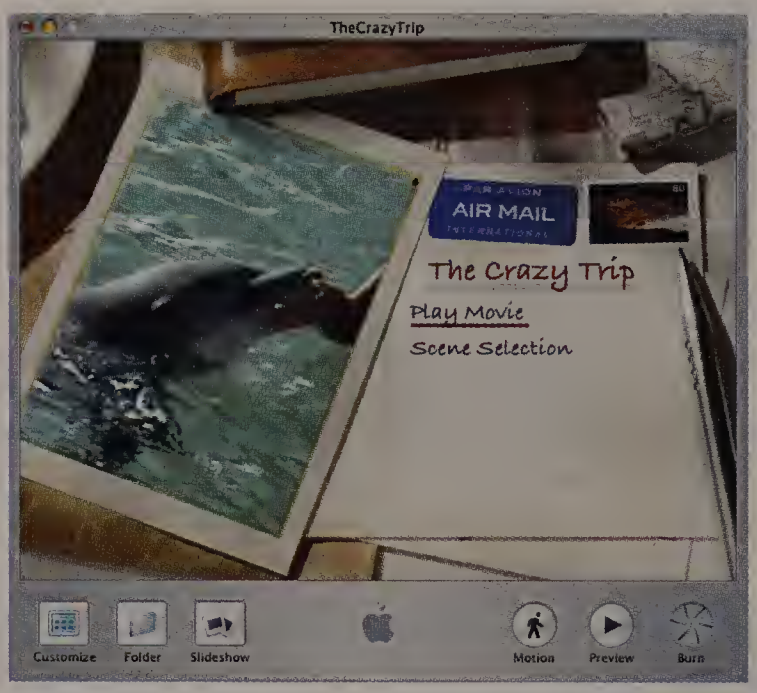
iPhoto The Photos button links iDVD to iPhoto 2. Here you have access not only to individual photos but also to iPhoto albums. These photo albums play like

preview QuickTime movies when they are applied to some of iDVD 3's new menu pages with special Photo or Movie drop zones. And if you drop an iPhoto album onto a menu page (outside of a drop zone), iDVD will create a slide show for you.

iMovie The Movies button connects to the Movies folder in the user's Home directory, as this is the default location for iMovie media. This feature is useful only for video projects that originated in iMovie. Final Cut Pro and Express users will need to drag and drop movies into iDVD 3.

Chapter Markers

Perhaps the most impressive new feature in iDVD 3 is chapter-marker support. With chapter markers, a DVD can have scene selections that let viewers jump to their favorite scenes quickly, as they can with professional DVDs. Chapter markers are embedded in the imported QuickTime movie and can come from iMovie 3, Final Cut Pro, Final Cut Express, or even QuickTime Pro. Once these QuickTime clips are dropped into iDVD 3, the program creates two buttons: Play Movie, which plays the entire clip, and Scene Selection, which leads to a separate menu page that lists the individual scenes.



Prettier Picture iDVD 3's new themes and drop zones let you easily customize the look-and-feel of your DVDs.

iDVD 3 limits you to 36 chapter markers per video clip, divided into 6 chapter markers per menu page. Another limitation is that iDVD displays the Play Movie and Scene Selection buttons for only one video clip with chapter markers at a time (the first movie loaded into iDVD). If you drag a second clip with chapter markers to the menu page, only the clip's name will be displayed. The Play Movie and Selected Scenes buttons for the second clip are displayed on the following menu page.

Slide Shows

When you add photos to a slide show, iDVD 3 converts them to video resolution. With the new Add Original Photos On DVD-ROM option, you can now include the full-resolution photos as well. While you can't view these high-resolution pictures with a set-top DVD player, they are accessible by computer—so people you send them to can print out their own copies.

Macworld's Buying Advice

iDVD 3 is a software marvel that lets you create stylish, professional-looking DVDs easily and quickly, and it's well worth its $49 price.—ANTON LINECKER

iDVD 3

RATING: ★★★★½

PROS: Slick new themes; chapter-marker support; full iLife integration.

CONS: Minor customization limitations; no external DVD-burner support.

PRICE: part of the iLife package, $49

OS COMPATIBILITY: Mac OS X

COMPANY: Apple Computer, 800/692-7753, www.apple.com

iDVD 3 TIPS AND TRICKS

Improve your iDVD experience with these hints on preparing your content.

Importing Chapter Markers from Final Cut Since version 3.0.2, Final Cut Pro has had the ability to export chapter markers to DVD Studio Pro. Now it (and Final Cut Express) can also export chapter information to iDVD 3—but the process is significantly different.

To create chapter markers in Final Cut, position your playhead in the timeline. Typing m twice will place a marker in the timeline and bring up the Edit Marker window. Name the marker (this will become the button name in iDVD), and click on Add Chapter Marker. For iDVD 3, adding a compression marker isn't necessary.

For DVD Studio Pro, you would convert your movie to MPEG-2 in Final Cut, but since iDVD 3 doesn't import MPEG-2 files, you need to export a Final Cut Reference Movie. Make sure that Chapter Markers is selected in the Markers options—the movie doesn't need to be self-contained.

Adding DVD-ROM Material It's possible to make your own enhanced DVDs with iDVD—adding material accessible only via computer. The last button in the iMedia Browser brings up the Status window—click on the Encoding Status button, and a DVD-ROM Contents option will appear. You can now drag almost any file into this window and even create folders to organize content.

Organize Your Content First Of course you want to edit your main video footage before putting it on DVD, but you may be less prepared with supporting elements such as photos, background movies, and music. While you can access iPhoto, iMovie, and iTunes files from iDVD, you cannot edit these elements within iDVD.

For example, if you want to have a particular sequence of photos play in one of iDVD's new menu drop zones, you need to build a photo album—putting photos in the order you want them displayed in—within iPhoto and then drop the album into iDVD. The same holds true if you want a short video sequence to play with a menu drop zone. You should edit the video element in iMovie first, so it will be available to you in iDVD.

If you want background music in iDVD but you want only a section of a song, you'll need to edit it in an application that supports sound editing, such as iMovie. iTunes doesn't let you edit sound.—ANTON LINECKER

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THE DIGITAL HOME CONFERENCE & SHOWCASE

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CEA Consumer Electronics Association

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The Fairmont San Jose

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BROADBAND INFRASTRUCTURE

HOW MANY PEOPLE EXHIBIT AND ATTEND?

Last year, more than 70 tech companies exhibited in the Showcase. Over 500 attendees spent three days discovering new products and services and discussing new technologies and marketing approaches — including chief executives, marketing directors, research scientists, industry analysts, hardware and software developers and project managers.

WHAT TYPES OF PRODUCTS ARE EXHIBITED?

Home networking systems, residential gateways, interactive entertainment, home systems which include security, lighting control, automation, energy management, broadband access systems, and digital entertainment products are exhibited at CONNECTIONS™.

By 2007, 30+ mil devices will be connected via media adapter solutions linking PCs to other consumer electronics in U.S. households.
— Parks Associates

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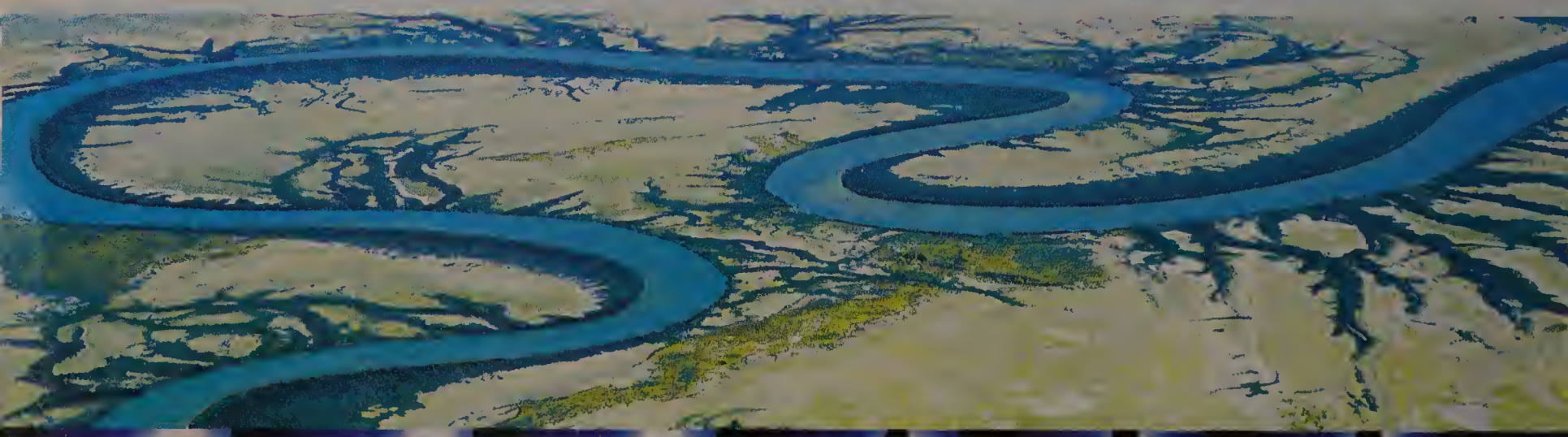
TAKE STOCK

DON'T START FROM SCRATCH—MAKE STOCK MEDIA SEEM CUSTOM-MADE



BY SONJA SCHENK

A designer under deadline, a sales rep putting together a last-minute presentation, a filmmaker looking for additional footage, and a teacher building a class Web site—what do they all have in common? They could save time and money by tapping into the vast array of digital media available instantly online.

Affordable stock media—ready-made artwork you can purchase for use in a project—used to be limited to photography and clip art. Today, options also include film and video footage, Macromedia Flash animation, 3-D animation, Web-design elements, music, illustration, fine art, and more. In fact, there are so many suppliers of stock art that it no longer has the uniform look it was once known for.

Better still, more and more stock media come in mutable forms—photos with clipping paths, scalable clip art, music separated into multiple tracks, digital-video–effects files with matching mattes, and editable Web-design elements. With a little effort and the handy tips included here, you can open up boundless opportunities for taking stock media and making them your own.

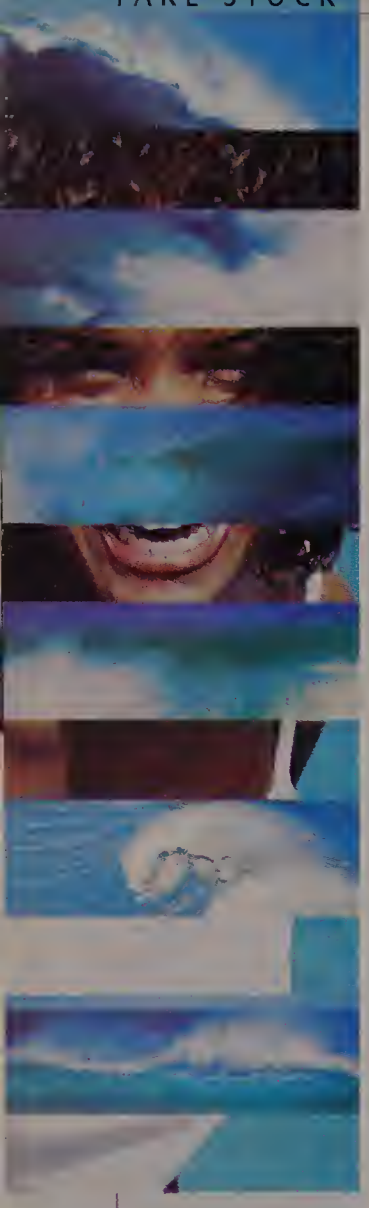
Finding Stock Media

When you're looking for just the right photo or Flash animation, the first step is to go online. If the stock-media world is unknown territory to you, start by browsing the vast Corbis and Getty Images Web sites. Corbis deals primarily in stock photography, although it recently began offering stock digital video, too. Getty Images offers clip art, fonts, music, and Flash animation, in addition to photographs and digital video.

To travel off the beaten path, try a boutique stock-media agency, such as Veer or Bigshot Media. In the absence of quantity, they offer unique styles or specialized types of stock media. (For more on what these agencies offer, see "Stock Options.")

Window-Shopping Web collections offer many conveniences that standard printed catalogs don't: you can search vast databases, browse thumbnails, listen to audio samples, and watch movie and animation clips. Online stock-media databases let you search using keywords, which can range from specifics such as *birthday cake* to abstract concepts such as *strength*.

If you like what you find, you can register with the Web site and save your selections in a folder, portfolio, or *lightbox*. Most online still-photo and clip-art libraries will let you download free, low-resolution *comps*, which can give you a good idea of whether an image works but aren't high-quality enough to print. Unfortunately, most dynamic-media thumbnails are protected so that you can't download them and use them as comps.



Stock media are usually sold either as part of a theme-based CD compilation—for example, Sound Ideas' SuperSampler sound-effects CD, available from Sounddogs.com ($129)—or as an individual download. Some boutique agencies offer special subscription rates—a good choice if you regularly require stock media (for example, if you publish a monthly newsletter). AbleStock charges $399 for unlimited downloads over a six-month period and $699 for one year.

Cheap Shots Don't overlook free materials. Many media-editing applications come with free samples. Some symbol fonts, such as Webdings and the Mini Pics family, are practically collections of clip art in their own right. (We'll discuss how to turn fonts into editable drawings later.)

Corbis offers a special "personal use" collection for nonprofessional users; it features low-resolution photos that cost less than $10 each. You may find these useful for greeting cards or personal Web pages. (A word to the wise: Don't avoid the "professional" areas on stock-media Web sites just because you're not a professional. Those areas have larger collections and occasionally offer perks, such as nonwatermarked comps, if you register.)

You can use comps for personal projects or in a mock-up that you present to a client for approval, but beware—it's illegal to use them professionally. Be sure to read the licensing details on the Web site. Lastly, many online stock-media agencies offer free samples, starter kits, and other money-saving promotions to introduce you to their products, so start browsing!

Creative License

Now for the fine print. When you purchase stock media, you pay for an end-user license that gives you the right to use that media—it's kind of like buying software. There are basically two kinds of stock-media licensing: *royalty free* (RF) and *rights managed* (RM).

If you're on a tight budget or in need of media for a personal project, royalty-free licensing is the way to go. You can purchase it for a flat fee, for use in almost any sort of project and for an unlimited time. Most important, it grants you or your company the right to use the media in a project you produce for a client.

The use of royalty-free media typically has two restrictions: you cannot resell stand-alone media (for example, as a poster, a T-shirt, or a song on a CD)—rather, you must incorporate them into a project that contains other media—and you can't share the media on more than eight to ten computers in your office or network. Sometimes there are other restrictions, too.

Money Shots As you may have guessed, rights-managed media cost more than royalty-free, but in return you'll get high-quality work that often has name-recognition value: photos by famed photographers, footage of Hollywood celebrities, songs by well-known artists, and so on. Prices are determined by a number of factors, including the type of usage (for example, the right

Stock Options

		LICENSING			ACCESS		MEDIA TYPE											
COMPANY	CONTACT	ROYALTY FREE	RIGHTS MANAGED	PERSONAL USE	DOWN-LOADS	CD COMPI-LATIONS	CLIP ART	PHOTOS	ILLUSTRA-TIONS	FINE ART	VIDEO AND/ OR FILM	FLASH MEDIA	3-D ANI-MATION	MUSIC	SOUND EFFECTS	FONTS	WEB-DESIGN ELEMENTS
AbleStock	www.ablestock.com	●	○	○	●	○	○	●	○	○	○	○	○	○	○	○	○
Artbeats	www.artbeats.com	●	○	○	●	●	○	●	○	○	●	○	●	○	○	○	○
Bigshot Media	www.bigshotmedia.com	●	○	○	●	●	○	○	○	○	●	●	○	●	●	○	●
Brand X Pictures	www.brandxpictures.com	●	○	○	●	●	○	●	○	○	○	○	○	○	○	○	○
Comstock Images	www.comstock.com	●	●	○	●	●	○	●	○	○	○	○	○	○	○	○	○
Corbis	www.corbis.com	●	●	●	●	●	○	●	●	●	●	○	○	●	●	○	○
Digital Vision	www.digitalvision.com	●	○	○	●	●	○	●	●	○	●	○	○	●	●	●	○
Flipcup	www.flipcup.com	●	○	○	●	○	○	○	○	○	○	●	○	○	○	○	●
FontHaus	www.fonthaus.com	●	○	○	●	●	●	●	●	○	○	●	○	○	○	●	●
Gen X Images	www.genximages.net	●	○	○	●	●	○	●	○	○	○	○	○	○	○	○	○
Getty Images	www.gettyimages.com	●	●	○	●	●	●	●	●	●	●	●	○	●	●	●	●
Graphicscene	www.graphicscene.com	●	○	○	●	●	●	○	○	○	○	●	○	●	●	○	●
Havana Street	www.havanastreet.com	●	○	○	●	●	●	○	○	○	○	○	○	○	○	●	○
Hemera	www.hemera.com	●	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○
killersound	www.killersound.com	●	●	○	●	●	○	○	○	○	○	●	○	●	●	○	○
Killer Tracks	www.killertracks.com	●	●	○	●	●	○	○	○	○	○	○	○	●	●	○	○
PhotoSpin	www.photospin.com	●	○	○	●	●	○	●	●	○	●	○	○	○	●	●	○
Rocketclips	www.rocketclips.com	●	○	○	●	●	○	○	○	○	●	○	○	○	○	○	○
Sounddogs.com	www.sounddogs.com	●	●	○	●	●	○	○	○	○	○	○	○	●	●	○	○
Stockbyte	www.stockbyte.com	●	○	○	●	●	○	●	○	○	○	○	○	○	○	○	○
Veer	www.veer.com	●	○	○	●	●	○	●	●	○	●	○	○	○	○	●	○
West Stock	www.weststock.com	●	○	●	●	○	○	●	○	○	○	○	○	○	○	○	○

● = yes; ○ = no.

to use a photo in a print ad versus the right to use the same photo in a TV show); the length of time the image will be used; and whether royalty payments will be made to a photographer, artist, model, or other entity. Depending on the vendor, other criteria may also come into play, such as the region where the media will be used.

Web sites that offer rights-managed media for sale act as an intermediary between you and the copyright holders—for photos and fine art, that usually means the photographers, the artists, or their families. For motion-picture footage and music, that often means companies—a production company such as Universal Studios or a distributor such as BMG. It can take longer to make a purchase, and there may be restrictions on how you can use the media, since the copyright owner may want to see your project in order to understand the context in which the work will be used. (For more information, see "Put Your Work under Lock and Key," *Create*, July 2000, and "Stay on the Right Side of Copyright Laws," *Create*, August 2000.)

Custom Processing

Here comes the fun part. Once you've familiarized yourself with the stock media available online, it's time to put them to use. We'll show you how to manipulate various types of media and blend them seamlessly with your project, whether it's a home video, a corporate slide show, or invitations to a family reunion.

Let's start with the basics. Still images—photos and clip art—are the most plentiful stock resource out there, and they're used everywhere, from TV shows to restaurant menus. Unfortunately, a lot of people think using stock media is "cheating"—they suppose that you're either too lazy, or unskilled, to draw something yourself or too cheap to hire a professional photographer. However, for most individuals and small businesses, creating a unique image can be impractical—or even impossible. If you want an aerial view of New York City, you'll have to hire a helicopter and pilot. If you want a photo of the Taj Mahal, you'll have to go to India to get it. If you want an image of Earth from space—well, you get the idea.

If you don't want anyone to know that you're using stock photography or illustrations, the trick lies in finding images that don't look like stock or manipulating a stock image so it's unrecognizable.

Simple Tricks No one wants to be embarrassed by getting caught passing off a stock photo as original—we can all learn from the mistake Microsoft made when it used a stock photo of a model with a purported real-life testimonial. (For the complete story of Microsoft's blunder, see the *New York Times* piece "Ad Campaign Leaves Pie on Microsoft's Face," at www.nytimes.com/2002/10/17/technology/circuits/17POGUE-EMAIL.html.) Avoid photos that have clear shots of models in them—we all have an amazing ability to recall a human face.

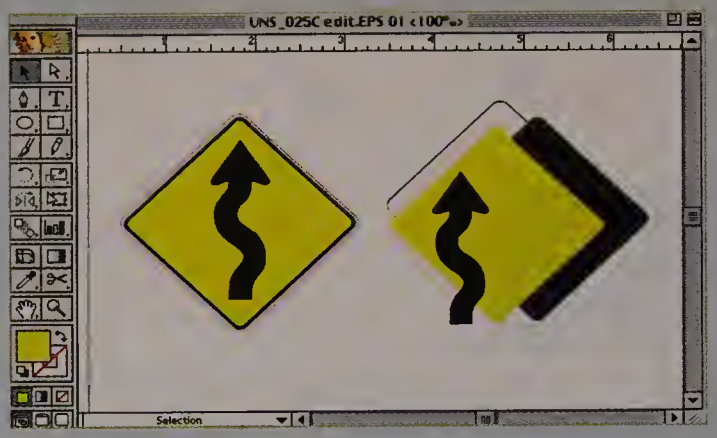
Another option is to crop an image so that it no longer resembles the original. Cropping may sound basic, but if you start with a high-resolution image, you'll have a lot of room to play around. You might find something unusual—and unrecognizable—to focus on. For example, a photo of a model in an office setting might yield a close-up of the model's eyes, an image of a hand on a mouse, or a cross section of a cluttered desktop. You may be surprised at what you can come up with once you start looking for photos *within* the photo.

Tie It Together Use Adobe Photoshop or Elements to make disparate images look as though they were meant to be together. Here, stock photos from Getty Images are resized and desaturated. Graphics are added to create the illusion of a matched set.

Mix and Match When you're creating a slide show or presentation, you may find yourself stuck with a series of disparate-looking photos. That's a dead giveaway that you're using media culled from various resources. Instead, try to visualize your set of photos as a spread in a magazine layout—they should share some visual elements, such as color scheme, style, size, orientation, and so on. But if they don't, there's no need to worry. Software such as Photoshop or even Photoshop Elements can help you create a matched set that looks as if it was made just for your presentation.

First you'll want to crop the photos so that they share the same size and orientation. To do this, use the selection tool and enter a fixed size in the selection-tool parameters—say, 320 by 240 pixels. Drag your cursor across the opened image to select the area you want, and select Crop from the Image menu. Next, desaturate the image by selecting Hue And Saturation from the Image menu (see "Tie It Together"). Mismatched color and lighting are key reasons for photos looking as though they don't go together, and getting rid of the color is the simplest way to make them match.

Cut and Paste Hand coloring or retouching a photo isn't easy, but that doesn't mean that working with as-is stock photos is your only option if you're not a graphics pro. By using Photoshop layers, you can create a



The Layered Look Choosing scalable clip art that separates easily into Illustrator layers, such as this image from Getty Images' EyeWire, can make customization a breeze.

composite image that's part stock and part original, or a collage of several stock photos.

Sources such as Corbis, AbleStock, and Getty Images offer images of people and objects photographed against white backgrounds. These images often come complete with a *clipping path*—a special Photoshop layer that contains an outline of the silhouette of the photo's subject—which makes it easy to separate the subject from the white background and set it against the background of your choice. Stock photos with clipping paths are ideal sources for simple animations, collages, and quick composites.

To make use of a photo with a clipping path in Photoshop 7, click on the Paths tab (if you don't see it, select Window: Paths) and turn the outline path into a selection by choosing Make Selection from the Paths window's pop-up menu. Then simply copy (⌘-C) the selected part of the photo and paste it into another image. (Photoshop will automatically place the image on a new layer, which will make it easy to position properly.) Here's a tip: If you want your photo collage to look realistic, placing something in front of the added object can really seal the deal.

Clip Smart At worst, clip art is instantly recognizable as stock media—let's face it: any black-and-white drawing tends to look like clip art, especially if it has a dated style. But at best, clip art is versatile, easy to manipulate, and very reasonably priced. You can get massive collections on CD, such as Hemera's Big Box of Art ($60), or instant single downloads (usually available for $3 to $25). Styles range from cartoons to realistic renderings—and you can find just about everything in between.

For speed and simplicity, you should stick with vector-based drawings, which are scalable—you can make them any size you want without any visible image degradation. Next, look for images with components—background shape, outline, foreground shape—that can easily be separated using the Ungroup command in Adobe Illustrator and saved in new layers (see "The Layered Look"). Then take control by changing the color scheme, stretching or shrinking components, adding or changing type, inserting new graphic elements, and getting rid of things you don't need.

Unfortunately, not all clip art breaks down into a neat set of layers. But there's still room to play around in Photoshop or Elements. You can remove any white or colored fills so that you're left with a transparent layer containing a black drawing.

Save an outline of the drawing by selecting the background with the Magic Wand tool and then choosing Inverse from the Select menu. With the selection active, create a new layer and use the Paint Bucket tool to fill the selection with the color of your choice. Now you can apply basic Photoshop filters to the drawing, the fill, or both. A gradated fill adds the illusion of dimension, as do drop shadows. Play around with the Layers window's Apply Modes pop-up menu—try Screen, Difference, or Multiply for some interesting effects.

Going against Type Symbol and decorative fonts are not only a good substitute for clip art—they're also particularly well suited to Web sites, since they're designed to look good at very small sizes.

In Illustrator, choose the Type tool (⌘-T), pick a symbol font such as Webdings from the Character window, and type your character of choice into the document. Enlarge it with the Scale tool while pressing the shift key so that it doesn't distort as you resize. Choose Font: Create Outlines to change it into a scalable illustration. Now manipulate it as you would any other vector graphic—distort it, rotate it, eliminate the parts you don't need, and add color. Check out "From Art to Animation" for step-by-step instructions on animating clip art in Macromedia Flash MX.

Moving Pictures

Unlike stock photos and clip art, most royalty-free stock film and video footage isn't meant to stand alone. Rather, it's intended to fill a gap in an existing project. You might buy stock footage to get an establishing shot of downtown Manhattan. You might use abstract images such as churning gears as a background for animations or to add depth to flying type. And why break out the matches and gasoline when visual-effects footage of explosions, fire, and smoke make creating pyrotechnics easy (and much less dangerous)?

Digital-video libraries such as Getty Images' EyeWire, Corbis Motion, and Artbeats offer royalty-free digital-video CDs for $300 to $700. You can purchase individual clips—when available—online and download them for $40 to $300, depending on the image resolution. If you're looking for movies to use on the Web, Bigshot Media's large collection of Flash-formatted video clips is a great place to start.

Calling the Shots Whether you use Apple's iMovie or Final Cut Pro, there are two simple rules for making stock video footage work with the other clips in your video sequence. First, aim for a match in the shooting style. For example, is the swooping aerial view of downtown L.A. the missing link in the establishing sequence of your short film, or will it just make the rest of your handheld footage look bad in comparison?

Second, try for a match in image quality. Most stock footage is aimed at professional users, so the quality level is very high—35mm film resolution,

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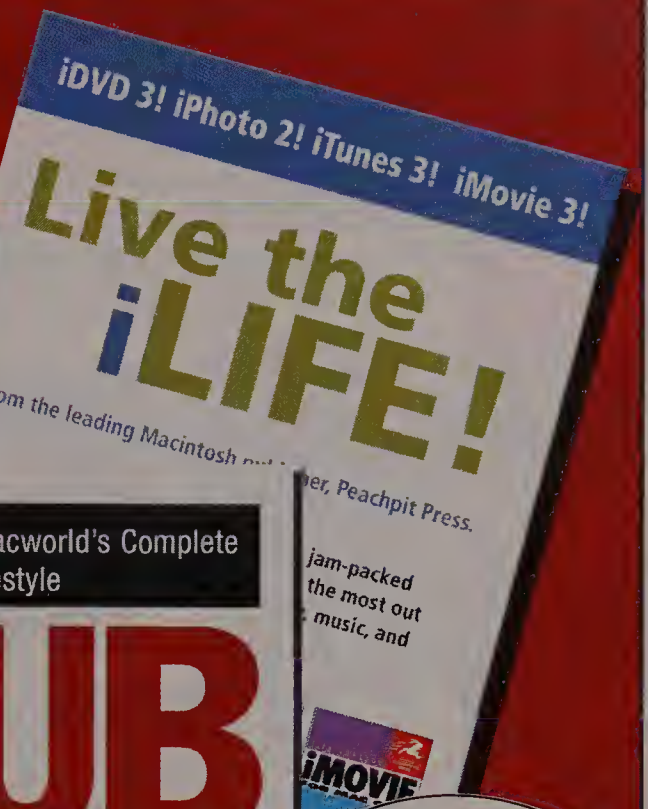

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FROM ART TO ANIMATION

Is your Web site looking dowdy? It takes only a few simple steps to turn vector-based clip art into an animation in Macromedia Flash MX.

Choose the Right Graphic A fairly simple piece of clip art—such as the bicycle racer used in this tutorial—is much easier to customize and animate than something more realistic. The bicycle racer simply needs to travel along a straight line and scale down in size.

Import and Add Color Most clip art comes as EPS files. These can be imported directly into Flash by selecting File: Import Into Library. The clip art appears as a symbol in the Library window. Double-click on it to open it in the symbol editor, and then select Modify: Break Apart. Use the Paint Bucket tool to fill white areas you want to color and the Eraser tool to get rid of things you don't need, such as the extra lines around the bicycle racer.

Adjust the Document Settings Select Modify: Document to access the Document Properties window. In our example, we set the size to 320 by 240 pixels to make room for the bicycle racer to move across the screen. Leave the frame rate at the default 12 frames per second. You can also choose a background color here.

Make It Move Select Modify: Scene to leave the symbol editor and drag your clip-art symbol onto the workspace. A black dot representing a keyframe will appear in the first frame of Layer 1 in the Timeline window. With the first keyframe highlighted, move your clip-art to where you want it to start (use the Scale tool to resize it if needed). Then click on the 24th frame of Layer 1 and select Insert: Keyframe. Move your clip art to the final position and resize again if necessary. Hold the shift key to select both keyframes in Layer 1 and all the frames in between. Select Insert: Create Motion Tween. An arrow in Layer 1 indicates the presence of a motion tween.

Publish Your Animation Select File: Publish and choose the final format for your animation—we chose SWF because we plan to embed the final animation in a Web page. Click on the Publish button to create a SWF file that can be inserted in a Web page or played with a Flash player.

Figure 1: This is original clip art from Havana Street.

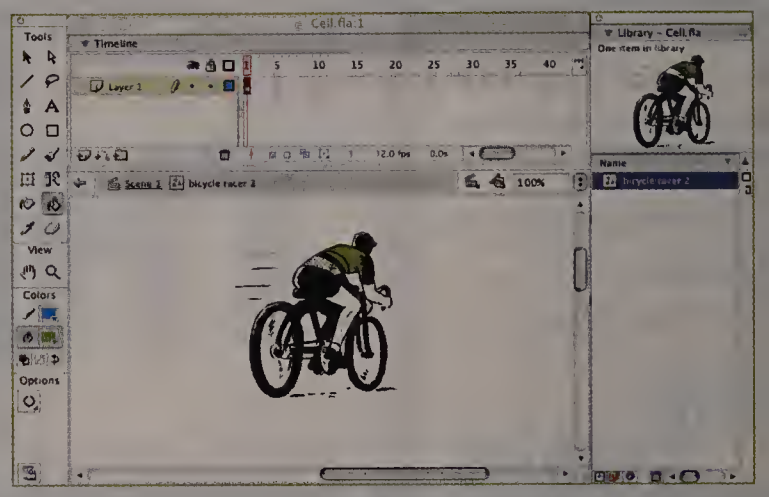


Figure 2: Add color with the symbol editor.

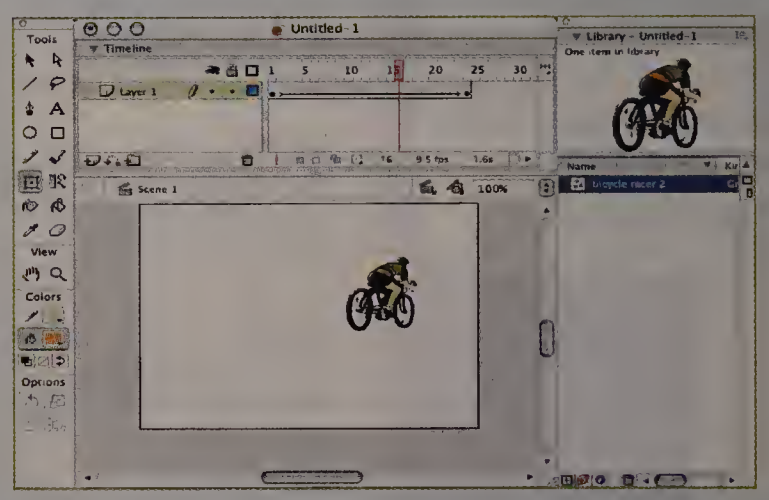


Figure 3: Add keyframes and a motion tween.

high-definition wide-screen video, or broadcast-quality D1 video. If the rest of your footage was shot with a MiniDV camera, the difference will be obvious. Final Cut Pro users can try applying one of the "film look" effects to their video footage to get a match. Otherwise, try to use stock footage that was originally shot on video, such as the DV clips available as single downloads from Rocketclips Stock Footage.

If you want to use stock visual-effects clips to create composite images (see "Burner Blowup"), you'll need a sophisticated editing application, such as Premiere, Final Cut Pro, or Avid Xpress DV. Since one second of motion-picture footage consists of 24 to 60 still images, creating film and video composites involves a process similar to creating a photo composite. Instead of clipping paths, dynamic-media composites use *mattes* or *key effects* to remove a portion of the image and replace it with an image on another layer. The explosion in "Burner Blowup" uses a *luma key* effect to remove the dark parts of the explosion footage to reveal the shot of the computer on the layer below.

Sound Designs

Stock music and sound effects can take any project that changes over time—a Web site, video, slide show, animation, or DVD—to the next level. In fact, it's a widely held belief in the film industry that sound—dialogue, music, ambience, and effects—accounts for half of the moviegoer's viewing experience. When video games and fancy Web sites are described as "cinematic," it's almost certainly due to a rich soundtrack.

Total Control Royalty-free music CDs designed for professionals usually provide more than one mix for each song—a full mix with vocals, a full mix without vocals, a drum and bass mix, and so on. For example, killersound offers music on CD or as downloads ($300

to $550). These come as SoundSets, which include a full mix of each song, an alternate mix, and a set of individual tracks, giving you total control over the arrangement. But keep in mind that you'll need either audio- or video-editing software that allows for lots of audio tracks, such as Digidesign Pro Tools or Final Cut Pro. Also, keeping all those tracks in sync can be challenging.

Timed Out The most effective way to make stock music seem as if it had been created for your project is to edit it so that the song ends when your movie does. The easy way to do this is with music loops. If you have neither the time nor the inclination to create the loop yourself, Sonic Desktop Software's SmartSound Movie Maestro (♦♦♦♦; *Reviews*, December 2002) will automatically create a score for your QuickTime movie or slide show, from a library of 26 songs. However, these ditties are licensed for personal use only, so you can't sell them to a client or use them in a professional Web site. Many music loops are also available on CD or via download from Sounddogs.com, killersound, and Killer Tracks.

If you feel up to more of a challenge, you can forgo the loops and cut the song "to time" yourself. Choose a piece of source music that has a strong ending, and add it to your movie in a video-editing application such as Premiere. Remove the material that's longer than your movie, but keep the final ten seconds or so of the song intact. For example, if your song is 30 seconds too long, find a 30-second segment in the middle to cut.

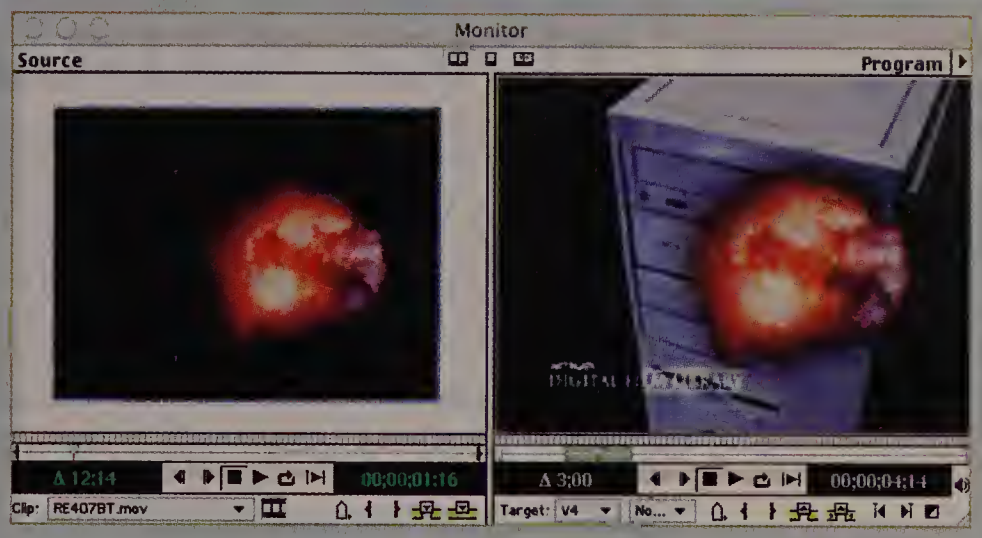
Close the gap between the start of the song and the end, and listen to it. If the edit sounds bad, you can adjust it in Trim mode or mask it by moving it to a place in your movie where a loud sound—such as laughter or a door slam—distracts viewers. Keep in mind that the louder your music, the easier it will be to hear a bad edit, so you may also want to lower the audio levels.

Special Effects No sound library is complete without some sound effects. Pros call the process of adding sound effects to a film or TV show *sweetening* because sound effects add punctuation to elements such as white flashes, flying type, and other visual effects; enhance transitions; and help set a mood. (For more about sweetening, see "Final Cut Pro Audio," *Secrets*, September 2002.)

Sounddogs.com sells individual sound effects (prices vary). You can also purchase sound-effects collections, which range from nature sounds to explosions. There are also unique collections such as the Sound Effects of Rocky & Bullwinkle & Friends three-CD set ($159; available from Sounddogs.com). Graphicscene, Killer Tracks, and killersound all offer CD collections that feature *rollover sounds*—clicks, beeps, and whirs specifically designed to accompany Web animations.

Web-Design Elements

One of the newest categories of stock media is specifically geared toward the Internet. Web-design elements such as Flash and GIF animations, interactive Web pages, and banners are fairly inexpensive and can save you a ton of time if you need to design a Web site in a hurry.



Burner Blowup This exploding CD drive was created with a key effect in Adobe Premiere, using stock video and an explosion-effect clip from Artbeats' digital-video library.

Graphicscene sells everything you need to build a hip-looking Web site: vector drawings, interactive Flash Web pages, and Web-oriented sound effects. You can also take your pick of the many CDs containing collections of animated GIFs, such as the Web Parts CD from Getty Images' Art Parts ($89; 800/661-9410, www.eyewire.com/products/clipart/artparts). New to the game are purveyors of "stock Flash," such as Flipcup and Bigshot Media, both of which offer Flash movies as single downloads with prices ranging from about $100 to $150.

Looking Flashy If you own Macromedia Flash MX, it's easy to customize stock interactive Web menus and *preloaders* (animations designed to keep Web sites' low-bandwidth visitors entertained while the site is loading). Simply open the .fla file in Flash and start changing things, from the colors to the fonts.

The Last Word

Whether you're working on a project for personal or professional use, you don't have to start from scratch. We're a long way from the days when cheesy clip art and sound effects were the only stock media available. With a little imagination, you can use stock resources to take your project to the next level—and no one will be the wiser. □

SONJA SCHENK is a writer and producer who lives in Los Angeles and San Francisco. She is a coauthor of *The Digital Filmmaking Handbook* (Charles River Media, 2002).

Stock images used in this article were provided by the following companies: Artbeats (explosion pictures at top right of page 85), Bigshot Media (picture of road on page 78, picture of gears at bottom right of page 79, and three pictures at top of page 81), Corbis (row of small images at top left of opening spread), the defunct Digital Stock (picture of cells at bottom of page 79), Digital Vision (picture of river at bottom of page 78, picture of face at top of page 79, last two small pictures in series beneath text at bottom of page 79, pictures on page 80, and picture of hands on page 81), Getty Images' PhotoDisc (pictures of airplane on page 79), Graphicscene (first four small pictures in series beneath text at bottom of page 79, picture of feathers on page 85, picture of circuit board on page 85), Havana Street (pictures on page 84), and Veer (picture of coin laundry at top of page 79).

Easier Edits with Word

Microsoft Word's Track Changes feature makes it easy to annotate and revise documents without creating a mess of cramped marginal notes and scratch-outs. But turning an edited file—or sometimes multiple files—littered with brightly colored additions, deletions, and comments into a unified whole can be tedious work if you don't take advantage of the full range of Word's editing powers. Here are some timesaving tricks (all of which should work with Word 98 and later) for dealing with even the most-complicated editing scenarios.

Tracked Changes

By the time you get a revised document back from your boss or editor, it may be a jumble of color, strikethrough text, and conflicting edits—particularly if many people worked on it. If you don't see any changes, open the Highlight Changes dialog box (Tools: Track Changes: Highlight Changes) and make sure the Highlight Changes On Screen option is selected. Your job now is to sort through this chaos of color, so you can decide which changes to keep and which to ignore.

ILLUSTRATION BY NEIL LESLIE

Accepting Change If you don't already have it on screen, open Word's Reviewing toolbar, which provides quick access to the most-important editing tools (see "A Toolbar Worth Reviewing"). Before you start incorporating edits into your final document, you may want to turn off Track Changes so you can edit your document without creating more tracked changes. To quickly turn the Track Changes feature on or off, click on the TRK button at the bottom of the screen, or click on the Track Changes button in the Reviewing toolbar.

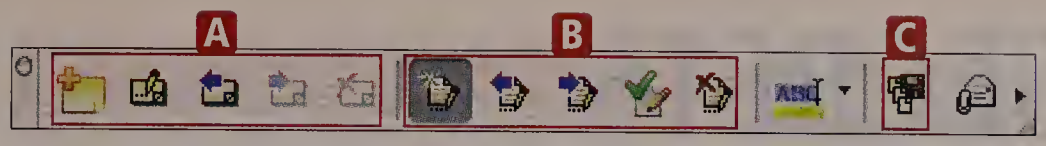
Because some editors—your boss, for example—hold more sway than others, you may want information on the origin of a change. Hovering the cursor over any tracked change will show you its author, as well as the date and time it was entered (this information is taken from the User Information panel in Word's Preferences). If nothing appears, open the View panel in Preferences and make sure the Screen Tips option is selected.

You can move through your tracked changes manually by control-clicking on each edit and choosing either Accept Change or Reject Change from the contextual menu. These commands affect the entire addition or deletion, even if it's several paragraphs long. For more-refined control, select the exact letters or words you want to accept or reject and then control-click on the selection. If you make a mistake, you can always undo it.

When you have lots of edits, control-clicking on each one can be a lot of work. In these cases, you can let Word step through them for you. Open the Accept Or Reject Changes dialog box (Tools: Track Changes: Accept Or Reject Changes). When you click on Accept, Reject, or one of the Find arrows, Word automatically jumps to and highlights the next edit. Although you can accomplish the same thing with the Reviewing toolbar, using the Accept Or Reject Changes dialog box offers a distinct advantage—navigating with keyboard shortcuts. Use the return key or F for Find, I for Find Previous, A for Accept, and R for Reject.

Getting a Better View If you're having trouble following the revised text because of heavy editing marks, adjusting how revisions are displayed may help you find your way. For example, if looking at deleted text is too distracting, you can hide it completely. Open the Highlight Changes dialog box and click on the Options button. Here you can define how insertions, deletions, and formatting changes are displayed. If you have difficulty seeing certain colors, you should definitely give this dialog box a visit.

You can also test your edits before committing to them by changing the View options in the Accept Or Reject Changes dialog box. By default, Word activates the Changes With Highlighting option, which



A Toolbar Worth Reviewing The Reviewing toolbar contains all the buttons you need to create and process comments A and tracked changes B, and even save different versions of your document C.

shows everyone's edits in all their colorful glory. To quickly see what your text looked like before anyone messed with it, choose the Original option. To see what would result if you accepted all the changes, click on Changes Without Highlighting. Leave this dialog box open as you work, and you can alternate between the different views.

Seeing It All It's easy to miss small or hidden edits when reviewing documents. To make sure you've covered everything, check for vertical lines in the left margin; these indicate the presence of a tracked change (see "The Scene").

Comments

The Track Changes feature is ideal for deleting or rewriting part of a document. But for questions, disagreements, or discussions, Word's Comments feature is a better choice. These electronic sticky notes let you add commentary to a document without cluttering the flow of text.

To comment on a particular sentence or phrase, highlight the text with your mouse and click on the Insert Comment button in the Reviewing toolbar. Word indicates the presence of a comment with light yellow highlighting followed by the editor's initials.

To read a comment, hover the cursor over the highlighted text. The comment appears in a pop-up label next to your cursor. (As with tracked edits, you must have Screen Tips turned on to see these labels.) Rather than scanning a long document for yellow highlights, you can use the Reviewing toolbar's Previous Comment and Next Comment buttons to jump from query to query.

To get an overview of what people are saying, open the Comments pane—which appears at the bottom of the screen—by clicking on the Edit Comment button in the Reviewing toolbar (or View: Comments). Click on a comment in the Comments pane to jump to its place in the text.

When you're ready to delete a comment, control-click on a highlighted word and choose Delete Comment from the contextual menu. (You can click on the Delete Comment button in the Reviewing toolbar, but make sure that the Track Changes option is turned off. Otherwise, you'll only strike through the comment.)

To print out comments along with the rest of your document, open the Print panel in Preferences and select Comments. (A check mark will also appear next to Hidden Text.) Word will print the comments in a separate list (organized by page number) immediately after the main body of the document.

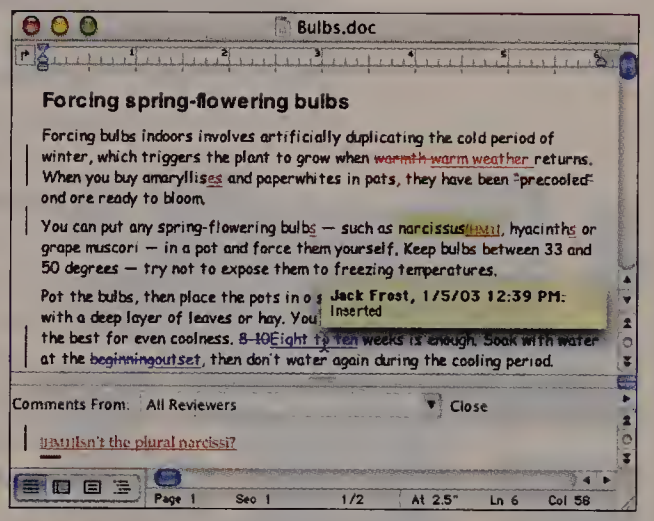
Versions

If your document will undergo many rounds of editing, you may want to save a copy of the document after each pass. Word's underused Save Version feature makes this easy. It stores multiple incarnations of a document in one file, so when you e-mail your document to the other members of your group, they'll have access to all earlier versions of that document.

To save a document as a version, click on the Save Version button in the Reviewing toolbar (or choose File: Versions, and click on Save Now). Add explanatory comments (to help you remember something about this version) in the Save Version dialog box, and click on OK. If your team is working over a network, consider activating automatic versioning: go to File: Open Versions, and select the Automatically Save A Version On Close option. Word will save a version every time someone closes the file, so you can backtrack if someone really makes a mess of the document.

If you decide you prefer the report as it was two days ago, you can easily return to that version. Just go to File: Versions, and double-click on the version you want. To start over using this version as a base, use the Save As command.

Keep in mind that saving multiple versions will bloat your document's file size. When you've finished editing your document, you should perform a Save As to create a new, smaller file that does not contain all previous versions.



The Scene By default, insertions are colored and underscored. Deletions are marked by colored strikethrough text. The vertical line in the margin shows where changes have been made.

Multiple Files

If you e-mail a document to several people at once, you're likely to receive an assortment of documents, each containing different edits. Instead of looking at each file individually, you can save time by merging them into one convenient location.

Save all the edited documents to your hard drive. Open the original document, and choose Merge Documents from the Tools menu. In the dialog box that appears, select the first edited document and click on Open to begin the merging process. When it's done, your starting document will contain the tracked changes from both documents, in different colors (by author). Keep going until you've incorporated all the files.

Untracked Changes

If one of your collaborators forgot to turn on Track Changes, Word's Compare Documents feature comes to the rescue. Open your original document and select Compare Documents (Tools: Track Changes: Compare Documents). Select the edited file and then click on Open. When Word is done comparing the two documents, your original file will have the edits inserted as tracked changes. □

NAN BARBER is a coauthor of *Office X for Macintosh: The Missing Manual* (Pogue Press/O'Reilly, 2002).

Command-Line Control

Mac OS X's graphical user interface (GUI) is elegant, graceful, and powerful enough to let most of us ignore what's happening behind the scenes. But if you're bent on finding new ways to streamline your work, it may be time to roll up your sleeves and dig into Mac OS's guts—the Unix command line. This article will help the adventurous get started.

ILLUSTRATION BY CHRISTOPH NIEMANN

You'll do all your command-line work in Terminal, which is in the Utilities folder in your Applications folder. Once you launch it, you're ready to begin.

The Anatomy of a Command

Command-line commands can be broken down into four parts. The first is the command-line *program*, which is like any other Mac application, but it uses text instead of graphics to communicate with the user.

Next come *options*. The command-line equivalent of preferences, they allow you to modify how a program functions. A general rule is that options are identified by either a single or a double dash, which is followed by a single character or a whole word. An additional parameter may follow the option.

After that are *arguments*, or the input the program acts upon. A program's arguments are usually file names, but they can be almost anything, including the output of other command-line programs.

Finally, there's *output*, the result of the program. Just like a regular program's output, a command-line program's output can be a file or a printed page, but most often it's text that appears on screen.

Learning ls Hundreds of command-line programs are available in the standard installation of OS X, ranging from the incredibly simple (echo will output whatever you type as its arguments) to the ridiculously obscure (yes will repeatedly press the Y key for you).

One of the most common is the ls (list) command, so we'll start with this. Type it into Terminal and press return. Congratulations, you've just run your first command-line program!

This command displays the contents of the current folder (or directory, in Unix lingo). You should see the names of all the folders and files in your Home folder, including Desktop, Documents, Sites, and so on. That's easy enough, but there's more. To modify the default behavior of a command, you can join it with options.

Options For instance, you can combine ls with several options that change the way it works. ls -l will display a longer list that has details such as file sizes and modification times. ls -a will show all files, including those whose names begin with a dot, which are normally hidden. (Names of Unix configuration files are often preceded by a dot so they won't clutter up normal listings.) You can combine options, too: ls -l -a will give you a long list of folder contents with all the files displayed.

How do you find out what options a command has? Type man (manual) followed by the name of any command-line program to see all the details about its options and functionality, as well as examples.

Arguments Like many other commands, ls also takes arguments—in the simplest case, the names of folders you want to see the contents of.

For instance, ls /Users will show you the Home folders of all the users on your machine, along with the universal Shared folder. The command ls /Users/jdoe /Users/rroe will show you the contents of the jdoe and rroe user folders.

You can even use wild cards to specify a range of names more easily: an asterisk will act as a stand-in for any group of characters, and a question mark will substitute for a single character. For example, ls /usr/bin/s* will show you all the files that start with the letter *s* in your computer's /usr/bin directory. This is handy when you want to narrow the program's arguments to a manageable range—*.doc for all your word processor documents, for instance.

Controlled Experiments

Now that you've gotten acquainted with the ls command, here are a few other command-line essentials.

Changing Directories with cd Unlike the Finder, which allows you to have any number of folders open at once, the command line limits you to a single place at any one time—this is your working directory. The cd (change directory) command will allow you to choose a new working directory.

Type cd Sites to move into your Sites folder and make it the working directory. Type cd .. to move one step back toward the root of your hard drive, and cd / to move all the way there. The command cd ~ will return you to your Home folder (the tilde [~] is shorthand for Home). If you get confused about which directory you've ended up in, the command pwd (print working directory) will show you where you are in the folder hierarchy.

Having Fun with Files You can do more than list files. Give the ditto command a try: it makes copies.

To use ditto, follow it with two file names (the first is the source and the second is the destination) or more (the last is the folder into which you're copying all the previous files), and it will make duplicates. Be sure to include the -rsrcFork option to preserve the HFS+ resource fork on the copied files, and feel free to use wild cards when you're specifying the source files and folders. For example, ditto -rsrcFork ~/*.doc /private/tmp will copy all of the word processing documents in your Home folder to the temporary directory. To view the copies, select Go: Go To Folder in the Finder and enter /private/tmp. You can also use cd /private/tmp and ls from the command line, of course.

With commands such as ditto and wild cards, you can start to see the power the command line gives you—a single command can copy hundreds of files.

The Impossible Made Possible

That's just the beginning. By stringing command-line commands together with *redirection*—using the output of one program as the input for another—you can accomplish things that are otherwise impossible.

There are three ways to redirect a command's output so that another command can use it as input. The vertical bar, or pipe (|), sends output directly to the following command-line program for use as input. For example, ls -l | more uses the more command to pause after each screenful of data.

If you surround a command with backward apostrophes, or backticks (`), the command will include its output in the argument list of another command. One example is cd `cat gohere.txt`. The cat (concatenate) command displays files on screen. Combined with backticks and cd, it can change the folder listed in a file into your working directory.

Finally, the greater-than sign (>) will dump the output to a file instead of the screen. For example, ls -l ~ > ~/myfiles.txt creates a file called myfiles.txt in your Home folder; this file contains the long list of Home's contents.

OTHER COMMANDS TO EXPLORE

You don't need a Unix tome to get started with the command line. You can learn an enormous amount simply by reading and experimenting on your own. Many commands come with detailed documentation; you just have to know where to look. In Terminal, type man (manual) followed by one of these commands to see details and examples.

File viewing: tail, head, more, less, cat
File manipulation: cut, sort, uniq, grep, wc
File creation: touch, mkdir
Ownership and permissions: id, chmod, chown, chgrp
Process manipulation: ps, top
System information: df, hostname, domainname, machine, who

Bring It All Together

The true power of the command line becomes apparent when you combine commands, options, arguments, and redirection. Here's a single line of commands that saves compressed backup copies of all the Word documents in your Home directory, complete with a dated file name: find ~ -name '*.doc' | cpio -o | gzip > `date +~/%Y%m%d.cpio.gz`.

As complicated as it looks, this breaks down very simply. The find command lists files based on several criteria: name, date, owner, and many more. find ~ -name '*.doc' lists every file name in your Home folder and its subfolders that ends with *.doc*.

The contents of that list are passed to the cpio (copy I/O) command, which is basically a simplified Unix version of StuffIt. The -o (output) option tells the program that you're creating an archive.

That data is sent to gzip, a Unix compression program that shrinks the archive and writes the result to a file made up of the output of the date command: your Home folder (~), the exact date (%Y%m%d), and finally the typical Unix file extension attached to a file that has passed through cpio and gzip (.cpio.gz).

Although files are stored in a single archive, you retrieve them individually. To recover a file, reverse the process: gzip -d -c YYYYMMDD.cpio.gz | cpio -i -d -r '*filename*'.

Replace YYYYMMDD with the date you made your archive and filename with at least part of the name you'd like to restore. This command will prompt you with the name of each archived file that matches, allowing you to skip it, restore it to its old location, or put it someplace new. If you'd like a chance to restore any file in the archive, just remove the filename portion of the command ('*filename*'), and you'll be asked about each. To restore the whole archive without question, just remove the -r option.

Taking Command This article just scratches the surface of what you can do with OS X's command line. For longtime GUI users, the command line can be a bit intimidating. But once you get used to a few simple rules, the full power of OS X is at your command. □

GREG KNAUSS has programmed for over 20 years, on everything from an Atari 400 to an IBM RS/6000.

Glory Days

Although I strive to be a forward-looking individual, from time to time I must allow the curmudgeon within to vent his cantankerous spleen. Rather than take this tetchy soul to the nearest Apple Store and bore the resident Genius with stories of the Good Old Days, I've chosen to devote most of this month's column to the subject of bringing bygone features to the modern Mac operating system—launching applications with a single keystroke, playing full-screen movies for free, sharing an Internet connection, and printing Finder windows.

Key Question

I'd like to launch applications in OS X through a keyboard shortcut, as I did in OS 9. Has Apple abandoned this feature?

"laffs4sale1," *Macworld.com forums*

This feature *has* disappeared in OS X, but before you don mourning clothes and swear to stick with OS 9 to the bitter end, allow me to offer you a handful of alternatives.

The first and least expensive alternative is Michael Kamprath's Keyboard Maestro 1.2.3 (www.keyboardmaestro.com). The free version lets you create as many as 20 hot-key assignments. The $20 full version offers unlimited assignments. Among Keyboard Maestro's many talents are inserting boilerplate text, hiding and showing background applications, launching URLs and AppleScripts, and allowing you to control iTunes from the keyboard without iTunes visible—all with single keystrokes or key combinations.

ILLUSTRATION BY LEO ESPINOSA

The second alternative is TrufSoft's $15 HotApp 1.7 (www.trufsoft.com). Like Keyboard Maestro, HotApp lets you launch applications with keystrokes (but unlike Keyboard Maestro, HotApp requires that you use a modifier key such as ⌘, option, or control in combination with another keystroke). HotApp also lets you insert text; launch AppleScripts and URLs; and perform system actions, such as forcing your Mac to sleep, restart, or shut down, with a combination of keystrokes.

The third alternative is James Thomson's $25 DragThing 4.5.2 (www.dragthing.com). This incredibly versatile tool has replaced OS X's Dock as my application launcher of choice. You can assign hot keys to any application, document, folder, or URL you've placed in one of DragThing's palettes.

The fourth alternative is CE Software's $80 QuicKeys X 1.5 (www.cesoft.com). QuicKeys costs significantly more than the other choices because it allows you to record a series of actions and then trigger it with a single keystroke. Although QuicKeys is a fine utility, using it solely for the purpose of launching applications with a keystroke is a bit like buying a backhoe to build a sand castle.

Missing in Action

I'm searching for the Present Movie option in Apple's QuickTime Player 6. The option was there in OS 9 but is missing from OS X. Where is it?

Ivo Noort, *Zoetermeer, the Netherlands*

In QuickTime 6 it's been renamed Full Screen, and it's lurking behind the scenes, waiting until you pungle up $30 for QuickTime Pro 6 (800/692-7753, www.apple.com). Apple brought Present Movie back to the Pro version of QuickTime Player in the 6.1 update. I regret to report that neither Present Movie nor the Full Screen feature is enabled in the free version of QuickTime Player. (However, the Present Movie feature wasn't, er, *present* in the free version of QuickTime Player 5.X, either.)

But a host of QuickTime movie players allow you to play full-screen QuickTime movies. I recommend Martin Hering's Playlist Player (http://mh1.de/playlistplayer). This free utility lets you create playlists of QuickTime movies and then play movies in succession—similar to the way you'd play a series of songs in iTunes.

Shared Interest

In OS 9, I used Vicomsoft's SurfDoubler ($69; 888/842-2608, www.vicomsoft.com) to share an Internet connection. I understand that Jaguar has a feature that allows you to share an Internet connection between two Macs. How do you set this up?

William J. Goegebeur, *Napa, California*

Let's use this fairly typical scenario: Your AirPort-equipped Power Mac G4 accesses the Web via an Ethernet connection to a DSL modem. You'd like to share that connection from your AirPort-equipped iBook.

Open the Sharing system preference on the Power Mac, and click on the Internet tab in the resulting window (see "Shared Pane"). You'll see one option for sharing the connection with other Macs (depending on how your network and Macs are set up, the option will let you share with computers connected via Ethernet, AirPort, or both). Continuing with our example, click on AirPort Options and then the Start button in the Sharing window. The name of your network—JoJo's Mac, for example—will appear in the Computer Name field at the top of the Sharing window.

On the iBook, click on the AirPort icon in the menu bar and select the network you've just established (JoJo's Mac) from the AirPort menu. You now have access to the Internet via the Power Mac's DSL connection.

You can use the same process for sharing a dial-up connection. The difference is that you must first establish that connection on the host computer (use Internet Connect to dial in to your ISP), switch on Internet Sharing, and then log in to the network from another computer.

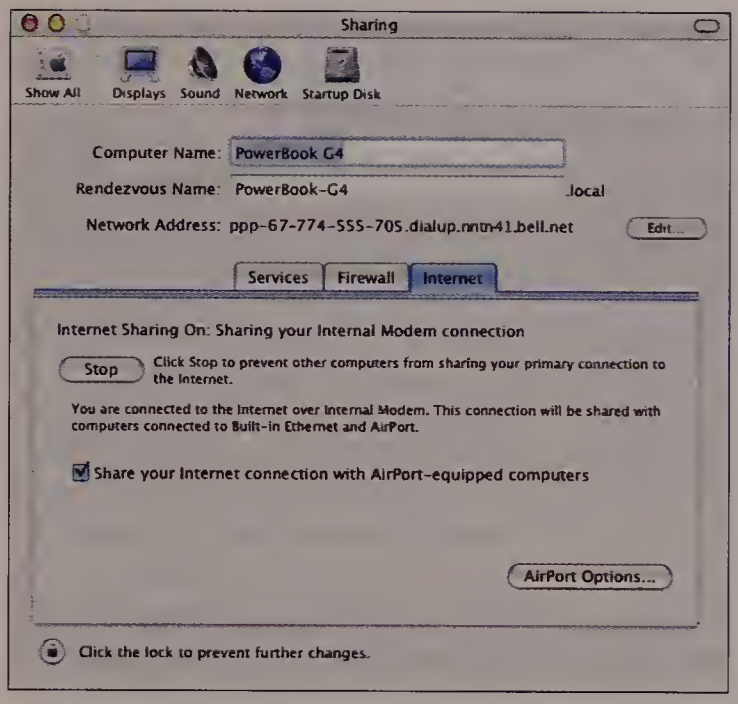
Prints on the Window

In OS 9 I could invoke the File menu's Print Window command to print the contents of a Finder window. How do you do this in OS X?

Michael Di Pietro, *Carlsbad, California*

Look outside Apple, and download a copy of SearchWare Solutions' Print Window 2.0 (www.swssoftware.com).

Much like OS 9's Print Window command, SearchWare's Print Window allows you to print a list of the contents of any open Finder window. But it does the OS 9 version one better by providing multiple commands for printing those windows. For example, you can open a Finder window and press ⌘-P to print its contents. Or you can select Services from the Finder's Finder menu and choose Print File Listing from the submenu. Or you can drag a folder onto the Print Window icon in the Dock to print the contents of that folder.



Shared Pane The Internet portion of the Sharing system preference is the gateway for sharing an Internet connection between Macs.

Print Window is donationware. If you like it, send the author $5 or $10.

Embedding Bugs

I'm looking for an easy way to batch-convert AIFF audio files into WAV files that I can share with Windows folk. I'd like to place these files in a document where I can add text comments. Can you help?

Glen Corcoran, *Brisbane, Australia*

It would be my pleasure. To convert those AIFF audio files, you can use a free and flexible tool that in all likelihood you already have on your Mac—iTunes. To do so, follow these steps:

Gather your AIFF files in a folder and place it in an easily accessible location—on the Mac's desktop, for example. Now launch iTunes and select Preferences (found in OS X's iTunes menu or OS 9's Edit menu). Choose the Importing option in the Preferences window, and select WAV Encoder from the Import Using pop-up menu. Click on OK to close the window.

Select Add To Library from the File menu, locate your folder full of AIFF files, and click on Choose in the Add To Library window. Locate those files in iTunes' Library (you'll find this easier to do if you sort files by Date Added) and select them all. Choose Convert Selection To WAV from the Advanced menu,

continues

TIP OF THE MONTH

If, like me, you've collected so much stuff on your desktop that you can't find anything, try this:

Go to your user's folder and drag the Desktop file into the Dock. Instead of closing open windows or moving windows around to find what you need, click on the new Desktop icon. When you do, you'll see a window that contains all the items residing on your desktop.

To launch an item directly without opening the Desktop window, click on and hold the Desktop icon, and then select that item from the resulting contextual menu.

Randy B. Singer, *Woodland, California*

UNSOLICITED ADVICE

The question about embedding sound files in a text document started me thinking about creating instructional documents that contain multiple media. Why must these files be text based? If, for example, your file will feature audio and very little text—just a note telling listeners to pay particular attention to an upcoming passage in a recorded deposition, say—why not use audio as the foundation for the document and append text to it?

It's possible (and easy) to create such a document with Apple's QuickTime Pro. Open an audio file in the Pro version of QuickTime Player and scroll to the point where you'd like to add a text annotation. Now launch a text editor—OS X's TextEdit or OS 9's SimpleText will do—and create a plain-text document. Type a line of text and press return. That text will appear in a QuickTime movie frame. To create each additional text frame, enter a line of text and press return.

Save your text document and switch to the Pro version of QuickTime Player. Select Import from the File menu and import the text file you created. It will open as a movie with a single text track in QuickTime Player.

Press ⌘-A to select the contents of the text movie and then ⌘-C to copy them. Click on the audio file to activate it, and select Add from QuickTime Player's Edit menu. A small window for displaying the text will appear in the audio file, and the text will be appended at the location of the Current Position indicator. Each text frame will appear for two seconds before the window displays the next text frame.

Rewind your audio file and click on Play. Your text will appear where you placed it.

and watch in wonder as iTunes converts the AIFF files into WAV files.

Now to the thornier portion of your problem—embedding those files in a document that also contains text. Although this is easy when the eventual destination is another Mac (open OS X's TextEdit, drag the audio files into the document, add your text, and select Save All from the File menu), such files won't open properly on a Windows PC. Therefore, I suggest that you look into the most universal format on earth—a Web page. Using any number of Web-page–creation tools (including Microsoft Word if you don't own a dedicated application), you can concoct an HTML document that contains both text and audio files. You can then post this page on the Web, or e-mail it to your Windows-using compatriots.

iBroke It

My dual-USB iBook running OS 9.2 started up one morning with the flashing question-mark folder. Before I could boot the iBook from my OS 9 disc, I dropped it.

Now when I put the OS 9 CD in the drive, it spins a little bit and then pops back out. Is there any way I can start up my iBook when the CD drive isn't working?

Allen Warren Jr., *Jersey City, New Jersey*

Ouch! Talk about your Mac-calamity double-whammy. Thankfully, there's a way to access your iBook's hard drive without waiting to replace the media drive (which, I'm afraid, you must eventually do). That way is FireWire Target Disk mode. It works like this:

Find a pal who has a FireWire-equipped Mac that you can spend some quality time with. Shut down your iBook, and string a FireWire cable between your friend's Mac (which should be running) and your iBook. Boot your iBook while holding down the T key.

With luck, your iBook's hard drive will show up as a local volume on the other Mac. Once it appears, you can run a troubleshooting utility, such as Apple's Disk First Aid or Disk Utility, or something with a little more power, such as Alsoft's $70 Disk Warrior (800/257-6381, www.alsoft.com).

Or you could attach a FireWire drive (hard drive or CD-ROM) to your iBook, attempt to boot it from that device, and then repair the iBook with the tools on the FireWire drive. This is my second choice because although FireWire drives *should* be able to boot your Mac, some of them won't.

Picture Perfect

I'd like a printout of the weekly calendar I view in Palm Desktop, but this application doesn't offer a layout that matches what I see on screen. Is there a way to do this?

Dave Robbin, *Hutchinson, Minnesota*

You've heard the expression "A picture is worth a thousand words." It's also worth its weight in gold when you want to print something on your Mac's screen *exactly* as it appears on your screen.

Although you could press ⌘-shift-4 to produce a lasso icon and then drag a loop around your weekly calendar, thus easily manufacturing a perfectly fine screen shot, you'd then have to open the resulting picture file and print it. With the help of a screen-capture utility, you can capture and print in one step.

One of those utilities is Ambrosia Software's Snapz Pro X (www.ambrosiasw.com). The $29 graphics-only version of the program allows you to capture and print selections in one step. (A $49 version also captures on-screen action as QuickTime movies.)

You can also capture and print areas of your Mac's screen with Code Line Communications' $20 ScreenShot Pro (www.code-line.com). I prefer Snapz Pro X because it lets you capture and print selections in fewer steps—simply select your printer as the destination for captures, and Snapz takes care of the rest. □

Contributing Editor CHRISTOPHER BREEN, who lacks the foresight to plant April Fools' jokes in his monthly column, is the author of *Secrets of the iPod*, second edition (Peachpit Press, 2002), and the forthcoming *Mac 911*, second edition (Peachpit Press, 2003).

Share tips and discuss Mac problems with other Mac users in the Mac 911 forum (www.macworld.com/subject/mac911). Also send tips by e-mail to mac911@macworld.com. We pay $50 for tips selected for publication in *Macworld*. All published submissions become the sole property of *Macworld*. Shareware and freeware mentioned in *Mac 911* are available at www.versiontracker.com.

ANDY IHNATKO

What I Learned by Spending 15 Hours at an Apple Store

Tales of Retail

IT'S 11 P.M., AND THANK GOODNESS I'M FINISHED. I HAD wondered how I'd feel walking out of an Apple Store after 15 hours in the bloody place. It's exactly the same way I felt after my first half-marathon: my legs and feet are sore from all the wandering around, I'm feeling the effects of carb depletion, and any feelings of exhilaration and accomplishment have been pushed aside by sheer relief that I am finally allowed to go back to my car. I say my goodbyes to the kind, knowledgeable, and (given that they're stuck working the closing shift on a Saturday night during the height of the Christmas season) highly unfortunate staff of the Apple Store at the North Shore Mall, in Peabody, Massachusetts. I had arrived hoping to measure the worth of Mac Geniuses and determine whether the Apple Store concept was in the best interests of Our Glorious Revolution. Done and done.

The Evening Vibe

A woman strides up to the Genius Bar at the back of the store, just to tell the staff that her Mac is working A-OK. She bought a new Mac about two months ago, and she's been a steady visitor, getting problems taken care of or simply coming in for a little hand-holding. The knowledge that she's a confident and self-assured Mac user with a machine running in top form fills her with such excitement that she just has to come in and share the news.

And that's not an atypical Genius Bar conversation. It's as though Apple Stores have taken the place of rural post offices. People come in to do business, but they also come in to connect with their community and catch up on the latest news and gossip. Time and time again, a customer is greeted by name or some other handle—"Indigo G3 iMac, your sister runs a catering outfit, right?" This is in sharp contrast to when I worked retail (and identified customers chiefly by their uncanny ability to interrupt me at the *worst* possible moment).

The Afternoon Vibe

The place just keeps selling and selling Macs; iMacs and PowerBooks are being loaded onto handcarts every time I look around. I'm amazed at how many are impulse purchases. One man came in for an iMac to put under the tree, but a couple of quick questions about working with Windows files led to half an hour of increasingly detailed questions—and lo and behold, the Pentium 4 he was going to buy for his home office was replaced by a second iMac. This sort of thing doesn't happen at OfficeMax.

The Midday Vibe

Somebody recognizes me. I must stress that being recognized isn't *important*, but I *was* rather hoping that I had achieved the sort of notoriety where I couldn't spend 15 hours standing in an Apple Store without being recognized at least once. Bill shakes my hand and tells me that he stops in every time he visits the mall. This time he's been pulled in by his daughter, who's in a walking cast. "Sports-related injury?" I ask. "Nope, Mac-related," he explains. "She was doing a back flip and hit my Power Mac 5400."

The Morning Vibe

The biggest challenge for me is just *shutting up*. It's still early, but the store is crowded with people asking interesting questions—about firewalls, digital cameras, printer sharing. I want to jump into every conversation and pummel these people with information until they have no choice but to feign death and hope that the referee intervenes, but the staff has yet to be stumped by anything.

> I want to chime in, but the staff has yet to be stumped by anything.

Arrival!

It's 8 a.m., and I arrive at the Apple Store with plenty of doubt. Instead of creating a bunch of Mac-only stores, shouldn't Apple be increasing the Mac's presence in traditional outlets? But, then again, Apple needs to build forts along the hostile shopping frontier. Creating yet another technology store would be a titanic waste of time—but what if Apple created areas where Mac people could congregate and build strength from one another? Embassies that increased the prestige and credibility of the Mac OS flag in Windows-controlled nations? Places where anyone could check e-mail for free, places staffed by people who honestly believed that Macs were good things and who, just as importantly, could defend that belief intelligently?

That would be a glorious day for The Revolution. □

Contributing Editor ANDY IHNATKO (www.andyi.com) also writes about technology for the *Chicago Sun-Times*. The full, minute-by-minute account of his Apple Store adventure is online, at www.macworld.com/2003/04/opinion/ihnatko. He suffered for this column . . . now it's your turn.

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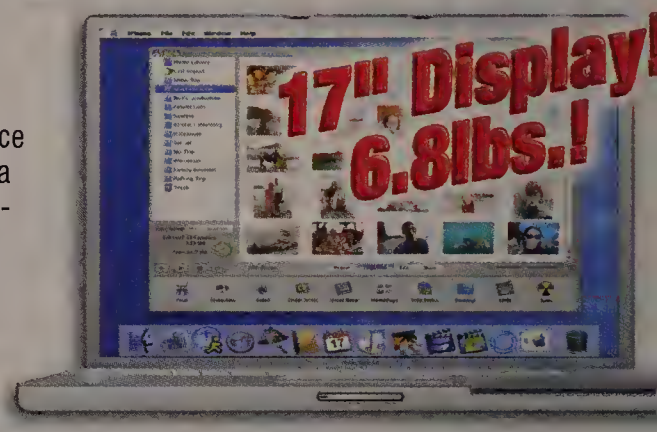

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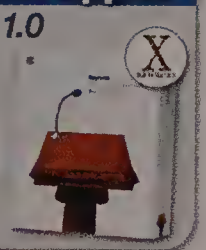

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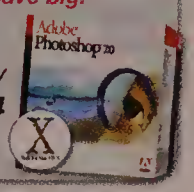

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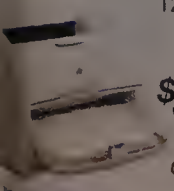

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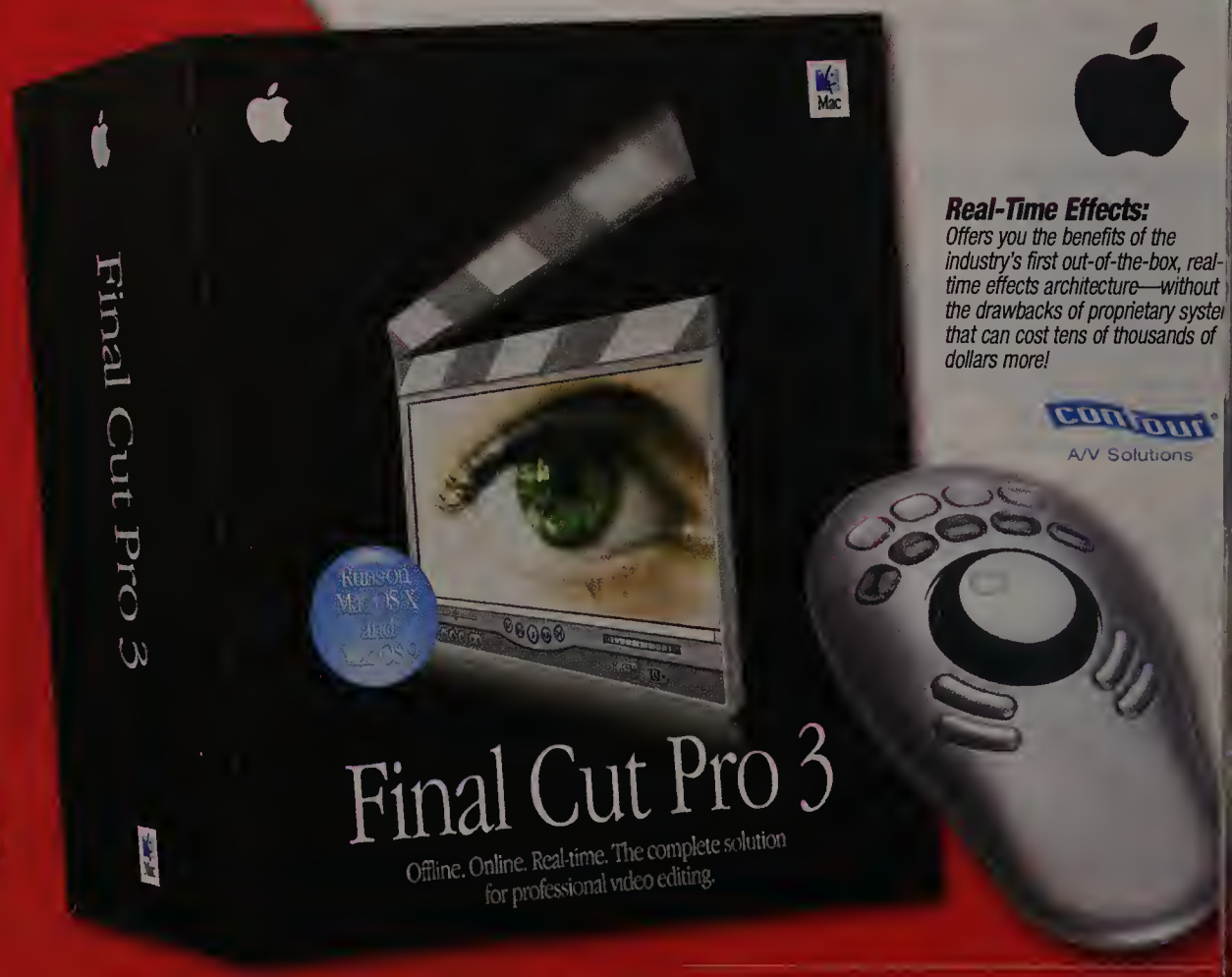

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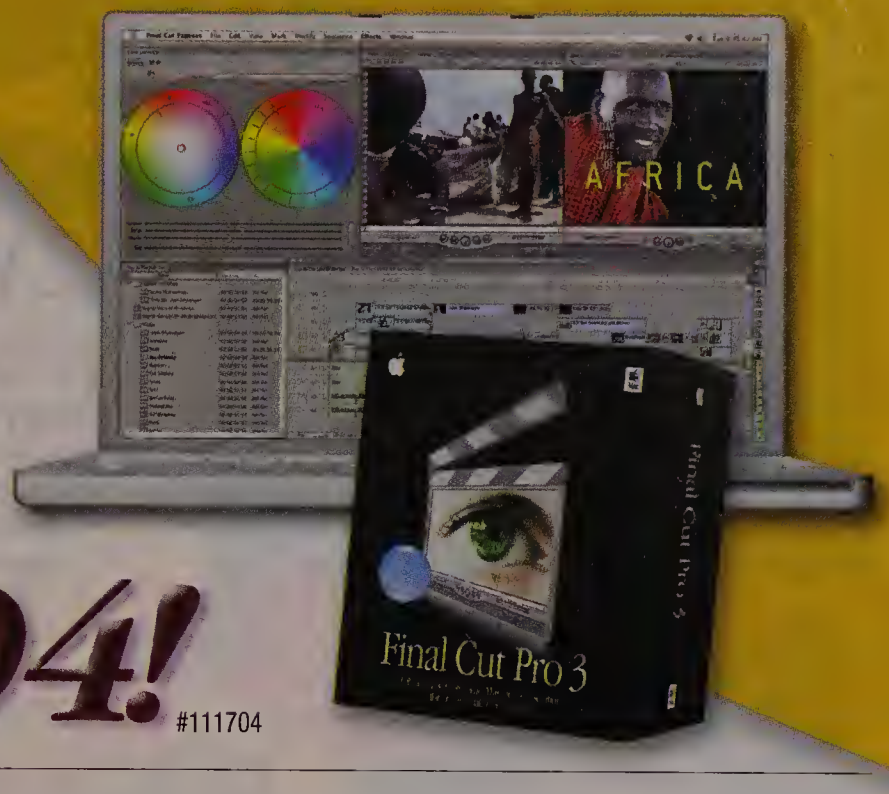

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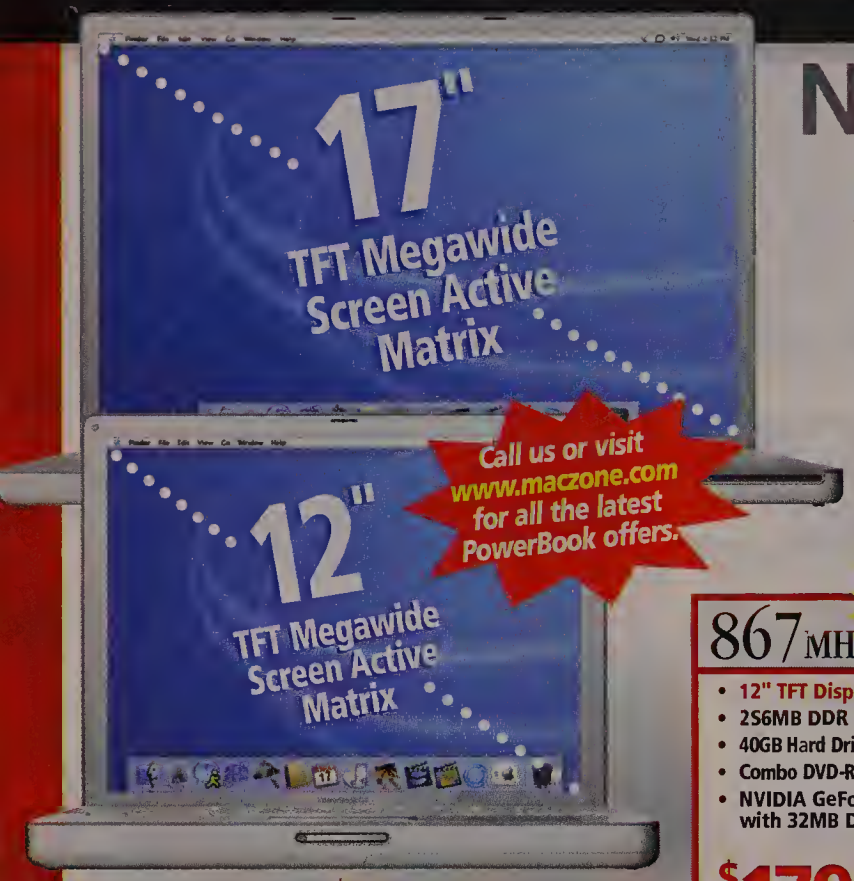

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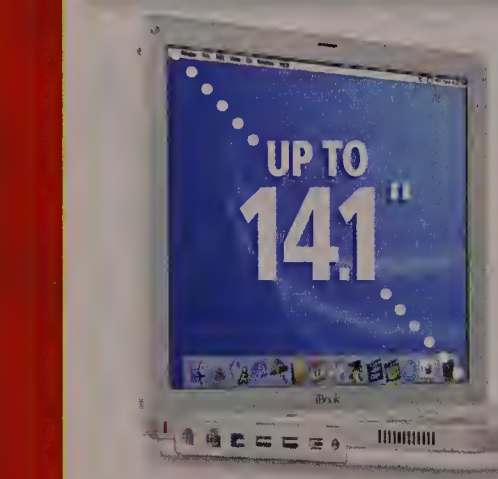

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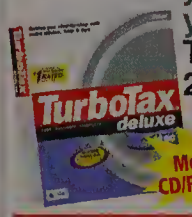

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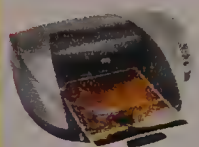

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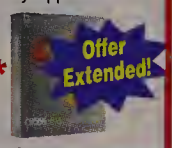

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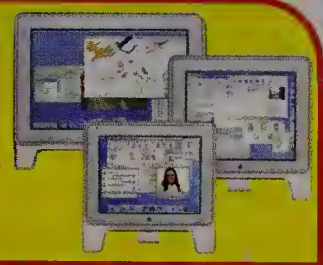

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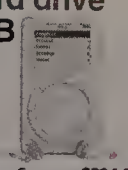

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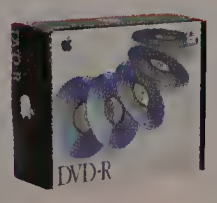

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#116415	17" Screen	1Ghz	512MB RAM	60GB HD	DVD-R/CD-RW	1440x900 Res.	$3294

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The Smallest Most Affordable PowerBook G4 Ever!

867MHz Only $1794

FREE!* Airport Extreme Card On 12" PowerBook

*$39.99 Installation Fee Applies.

#116418	12.1" Screen	867Mhz	256MB RAM	40GB HD	DVD-R/CD-RW	1024x768 Res.	$1794

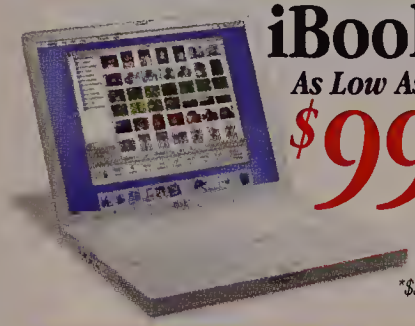
15" PowerBook G4

Now Up to 1GHz
867MHz Starting at $2294

FREE!* 512MB Upgrade with Both 15" PowerBooks

#765531	867Mhz	15.1" Screen	256MB RAM	40GB HD	56K	CDRW/DVD	$2294
#766962	1Ghz	15.1" Screen	512MB RAM	60GB HD	56K	DVD-R/CD-RW w/Airport Card	$2794

iBooks Now Up To 800MHz!



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#764352	700Mhz	12.1" Screen	128MB RAM	20GB HD	CD-RDM	1024x768 Res.	$994
#764382	800Mhz	12.1" Screen	128MB RAM	30GB HD	DVD-R/CD-RW	1024x768 Res.	$1294
#23552	800Mhz	14.1" Screen	256MB RAM	30GB HD	DVD-R/CD-RW	1024x768 Res.	$1494

FREE!† Epson Stylus Photo C42UX Printer

†Free printer is after Mail-in Rebates from Epson and ClubMac when purchased with any Apple CPU. Price before rebates is $79. Offer Valid from 10/01/02 – 2/28/03 or While Supplies Last.

EPSON Stylus C42UX $49** Inkjet Printers

#550180	Epson Stylus Color C42UX	$49.00**
#595729	Epson Stylus Color C62	$79.00*
#569528	Epson Stylus Color C82	$149.00
#956514	Epson Stylus Color Photo 1280	$499.00
#540438	HP Deskjet 3820	$99.00
#579211	HP Deskjet 5550	$149.00
#74261	HP Deskjet 1220C PS Color	$479.00

*After $20 Mail-in Rebate **After $30 Mail-in Rebate-Both rebates expire 3/31/03

CPU Accelerators

#74264	Sonnet Encore G4 500/250Mhz w/ 1Mb Cache	$299.95
#59435	Sonnet Crescendo G4 450/200Mhz 1Mb Cache	$239.99
#961651	Sonnet Harmoni G3 500/Firewire Card For Imac A-D	$299.95
#539715	Sonnet Encore/St G4 800Mhz	$399.95
#106543	New! Sonnet Encore/St G4 1.2Ghz	$799.99

Accessories

#810315	Top Loading Notepac	$38.00
#47509	Keyspan USB To Twin Serial Adapter	$69.99
#354862	Apple Extra Battery Powerbook G4 Titanium	$129.00
#975672	Belkin Regulator Pro Gold USB 650 UPS	$149.99
#961874	Photo Control Docking Station/G4 Titanium	$209.99
#30726	APC Back UPS Pro 650 Beige	$239.99

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#972281	Apple Apple Pro Speakers (White Insides)	$59.00
#951562	Sonnet Tango Adapter Card 2 Firewire/2 USB Port	$89.99
#369724	ATI Radeon 7000 Mac PCI 32MB NTSC	$118.00
#552375	ATI Radeon 9000 Pro Mac AGP 64MB NTSC	$169.00
#967178	ATI Radeon 8500 Mac AGP 64MB NTSC	$179.00
#953115	Eskape Labs MyVideo USB Video Capture	$149.00
#952775	Harman Kardon Soundstick 3 Piece USB Speakers	$178.99
#944700	Dazzle Multimedia Hollywood: 1394 DV (Mac)	$264.94
#961764	Formac Studio-Analog/DV Converter with TV Tuner	$389.00
#566453	Formac Studio-Analog/DV Converter	$269.00

Nikon ELECTRONIC IMAGING Coolpix 2000 $229*

Digital Camera

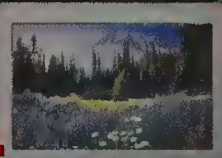
#537920	Nikon Coolpix 2000 2.0MP 3X/2.5X USB	$229.00*
#969346	Nikon Coolpix 2500 2.0MP 3X/4X 16Mb CF USB	$279.00*
#974515	Nikon Coolpix 4500 4.0MP 4X/4X USB	$599.00†
#974509	Nikon Coolpix 5700 5.0MP 8X/4X 16Mb CF	$1,199.00
#962374	Canon Powershot G2 4MP 3X 32Mb Cf USB	$589.00

*After $20 Instant Rebate †After $50 Mail-in Rebate & $50 Instant Rebate
All offers expire 3/31/03

Input

#953969	Apple Apple Pro USB Optical Mouse	$59.00
#953968	Apple Apple Pro USB Keyboard	$59.00
#960688	Contour Shuttle Pro Multimedia Jog/Shuttle Cont	$89.00
#961944	Wacom Steel Graphire2 4X5 USB Tablet W/Pen	$99.00
#962688	Wacom Intuos2 6X8 W/Pen & 2D Mouse-USB	$349.99
#962689	Wacom Intuos2 9X12 W/Pen & 4D Mouse-USB	$469.99

20" Cinema Display New! $1294



Displays

#130652

#960097	Apple 17" LCD Studio Display	$694.00
#130652	Apple 20" LCD Cinema Display	$1,294.00
#970382	Apple 23" LCD Cinema HD Display	$1,994.00
#363234	Sony E540 21" .24mm 1900X1440	$559.00
#947137	Sony Multiscan G520 21" .24mm	$695.00
#967667	Cornea MP704 17" LCD	$419.00
#767511	LaCie Electronblue 19" IV 1600X1200 76Hz	$399.00
#762990	Sceptre X5 Naga 15" LCD	$199.00*
#663867	Formac Gallery 2010 20" LCD	$1679.00

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Canon ZR-40 Mini DV Camcorder $459.95

Digital Camcorders

#968280	Canon ZR40 Mini DV Camcorder	$459.9
#968284	Canon ZR50MC Mini DV Camcorder	$599.0
#537667	Canon GL2 Mini DV Camcorder	$2,299.0
#968521	Sony DCR-PC 120BT Mini DV Camcorder	$1,599.9
#961666	Sony DSR-PD 150 Digital Camcorder	$3,389.9

Projectors

#794651	In Focus LP280 1000 Lumen SVGA 5.7lbs	$1,499.0
#956645	In Focus LP130 1100 Lumen XGA 3lbs	$2,699.0
#873442	Proxima X350 1100 Lumen XGA 3.5lbs	$2,699.0
#671125	Epson Powerlite 52C 1200 Lumen SVGA 6.8lbs	$1,399.0
#453620	Epson Powerlite 730C 2000 Lumen XGA 4.3lbs	$3,199.0

Networking

#874476	Belkin 4 Port Firewire Hub	$69.9
#957576	Belkin Firewire 6-Port Hub	$79.9
#35839	Asante Asantetalk 10BT To Localtalk Connection	$84.9
#114812	Apple Airport Card	$79.0
#114811	Apple Airport Base Station Extreme	$249.0
#771469	Macsense Xrouter Aero Wireless Cable/DSL Router	$199.9

Communications

#863922	Global Village Teleport 56K V.92 Ext Serial Modem	$74.9
#28300	US Robotics 56K V.90 Ext Mac Modem	$79.
#862912	Zoom V.90 56K Ext USB Voice Modem	$92.
#374235	D-Link Cable Modem	$64.

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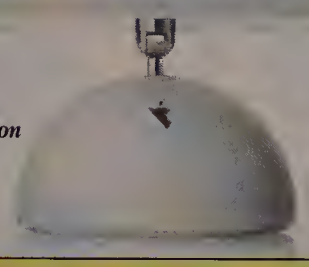

#132761	1Ghz	17" Screen	256MB	80GB HD	DVD-R/CD-RW	1024 x 768 Res.	$1794
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Software-Games

#358851	Aspyr Spiderman	$24.99
#968435	Aspyr Sims Hot Date Expansion Pack	$28.99
#754855	Aspyr Tony Hawk's Pro Skater 3	$35.99
#103153	Aspyr The Sims	$48.99
#452449	Aspyr Medal Of Honor: Allied Assault	$48.99
#115160	Aspyr Tiger Woods PGA Tour 2003	$49.99
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#9525	Harry Potter and The Chamber of Secrets	$29.99
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#540952	Epson Perfection 1660P Photo 1600X3200	$179.00
#540951	Epson Perfection 2400 Photo Scanner	$229.00
#552287	Smartdisk Smartscan 2700 Film Scanner	$219.99
#332059	Microtek Scanmaker 4800 2400X1200	$89.99
#952795	Microtek Scanmaker 8700	$698.00
#956698	Nikon Super Coolscan 4000 ED Film Scanner	$1,549.00

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#781206	Brother HL-1470N 15ppm	$489.99
#958348	HP LaserJet 1200SE 15ppm USB	$378.99
#957974	HP LaserJet 2200DN 19ppm USB	$1,098.00
#972514	HP LaserJet 4600DN Network Printer	$2,329.00

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iPhoto 2
iTunes 3
iMovie 3
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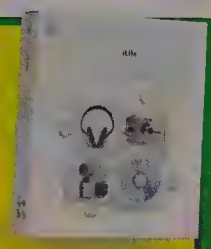

Software-Business

#972337	Apple Appleworks 6.2.4	$77.99
#551926	Apple Mac OS X V10.2	$98.95**
#9684	Connectix Virtual PC 6 with Win XP Home	$199.99
#537929	Filemaker Pro 6.0 Mac Upgrade	$133.94†
#7689	Intuit QuickBooks Pro 5.0 for Mac	$136.98*
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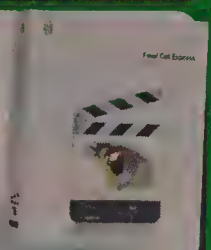

Software-Graphics

#968964	Adobe Photoshop 7.0 Upgrade	$134.94
#963236	Adobe Illustrator 10 Upgrade	$139.94
#968095	Adobe Photoshop 7.0 Full Version	$588.99
#447711	Adobe Design Collection 6.0	$999.00
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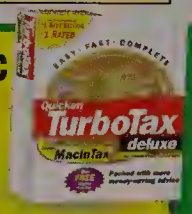

Software-Utilities

#658619	Aladdin Stuffit Deluxe 7.0	$28.95*
#795108	Dataviz Maclink Plus Deluxe 13.0	$88.89
#372248	Symantec Norton Antivirus 8.0	$64.99
#374767	Symantec Norton Utilities 7.0	$94.99
#374768	Symantec Norton Systemworks 2.0	$119.99
#975774	Roxio Toast 5 Titanium	$79.89

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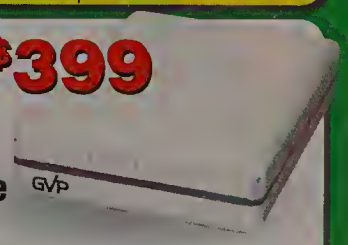

#505570	GVP 80GB External FireWire HD 7200	$169.00
#505565	GVP 120GB External FireWire HD 7200	$229.00
#641667	GVP 200GB External FireWire HD 7200	$399.00
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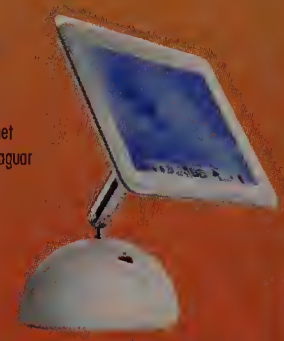

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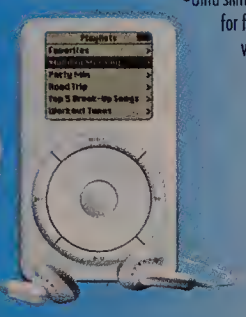

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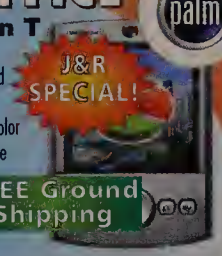

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SCANNER/MONITOR

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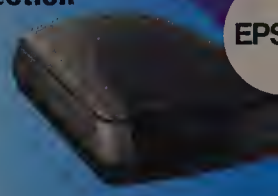

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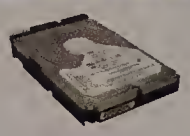

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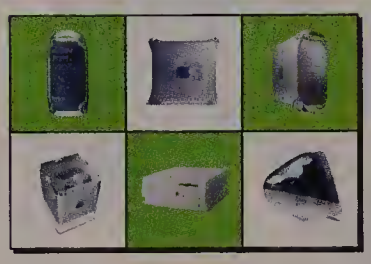

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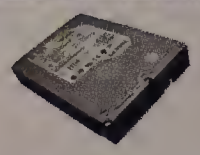

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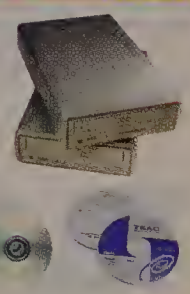

All solutions feature 1yr warranty US/International Switching Power Supply, 2 FireWire Ports, FireWire Cable, 25 Pack of 80 Minute CD-R Media, full compatibility with Apple OS 8.6 - 9.2.x & OS X. Also compatible with any OS supporting USB or FireWire storage. All CD Solutions include Roxio Toast Lite 5.1.x. All DVD Solutions include CharisMac Discribe 5.x and 5 Pieces of 2X Certified DVD-R Media.

MacAddict RATED ●●●●○ GREAT

CD-R/RW External Solutions:

Compatible with Apple iTunes, Disc Burner, Roxio Toast, Discribe, Nero, and just about any Windows CD Authoring/Player software

	FireWire	FireWire + USB 1.0 /2.0 Support
Mercury 52x24x52x CD-R/RW with 2MB Buffer & SmartBurn Technology	$139.99	$159.95
Mercury 52x24x52x CD-R/RW with 8MB Buffer & BurnProof Technology	$159.99	$179.95

DVD-R/RW & CD-R/RW ' SuperDrive' Solutions:

Compatible with Apple DVD Studio Pro, Apple iTunes, Roxio Toast, CharisMac Discribe, and just about any Windows CD/DVD Authoring or Player software.

	FireWire	FireWire + USB 1.0 /2.0 Support
Mercury DVR-105 Pioneer 4X DVD-R/2X & DVD-RW/16X & CD-R(W)/8X 'SuperDrive'	$379.99	$399.99

OWC also stocks FireWire and USB Storage Solutions from Lacie and Ezquest. Call or visit http://www.MacSales.com for all of the latest products offered by OWC

FireWire & USB add-on card from only $19.99! Connect to thousands of new USB and FireWire Products!

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MacAlly $79.95
2-port FW & 2-port USB 2.0/1.1 PCI Card

Save a slot and add the latest USB 2.0+1.1 and FireWire support to any Mac with a PCI Slot! Compatible with Apple OS 8.6-9.2.x, OS X.

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Century 2-port PCMCIA FireWire Card $29.97

Add FireWire to any PowerBook G3 WallStreet or Lombard Model. Plug and Play compatible with OS 8.6-9.2.x, Apple OS X.

MacAlly 2-port USB 1.1 PCI Card $24.95

Add USB to ANY Mac with a PCI slot, Plug and Play compatible with Apple OS 8.5.1 - 9.2.x and OS X

PowerLogix RapidFire 2 Port USB 3 Port FireWire PCI Card $59.95

FireWire and/or USB lets you connect to the Apple iPod, Digital Cameras, Digital Camcorders, CD/DVD Burners, Hard Drive Storage, Keyboards, Mice, Scanners, Printers, and MUCH MORE! If your computer didn't come with one of these interfaces, they are easy to add so you too can plug and play USB & FireWire devices!

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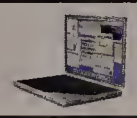
OWC Laptop Screen Protectors

Protect your investment!

OWC Laptop Screen Protectors PREVENT marks on your PowerBook LCD Screen! FREE iKlear Apple Polish included for a 'Klean Start!'

LSP WallStreet, Lombard, Pismo $14.99

LSP for all PowerBook G4 Models $17.95



LSP for all iBook Models $13.95

Made in the USA of top quality, glove soft leather, OWC LSPs are both a durable and attractive solution to a known problem.

PowerBook Accessories

NewerTech TiHandle & Stand PowerBook G4 $39.95

Add easy an easy carry handle that doubles as a great stand to any Apple PowerBook G4! No modification required, attaches using standard Apple screw position on the back of the PowerBook. Does not void warranty! 5 Year NewerTech Warranty.

Roadtools Podium CoolPad $29.95

For PowerBook, iBook, ANY-Laptop! Available in Black or White

Roadtools Traveler CoolPad $19.95

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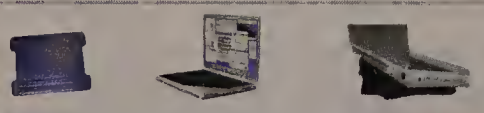


OWC Mobility Bundle #4 for G4 PB $54.95

Includes TiG4 LSP, LapBottom, and RoadTools Podium(black) - Save 25%!

OWC Mobility Bundle #6 for iBook $49.95

OWC Apple Bit Kit $7.95

Just what you need for installing memory or a hard drive and more for Apple Desktops, PowerBooks, iBooks/More

OWC Stocks 100s of Accessories for your PowerMac, PowerBook, iBook! Call or visit www.macsales.com to see all the Carrying Cases, Mice, Keyboards, Audio/Video Accessories, Power Adapters(Auto/Air/AC), and More that we offer!

Mac Audio & Video

M-Audio Audiophile 2496 PCI Card $148.99

Uncompromising quality for Audio input and output for serious Audio work on your Mac!

Full 24 Bit/96khz 4 Port Audio In and Outs provide for MultiTrack recording, MIDI Recording and Playback, Home Theater & MORE! Computer Music Magazine says: How does it sound? Well, in a word, stunning.

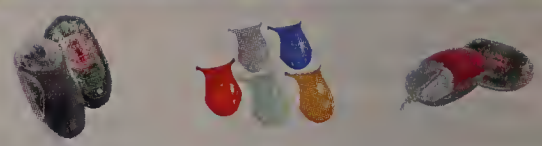
M-Audio Sonica 24-bit Dolby Digital 5.1 /DTS/Dolby Pro-Logic Upgrades $79.00

Plug and Play USB device that lets your Mac go all the way with Output/Playback!

PowerBook Carrying Cases

OWC TiG4 Carrying Case $29.95

Keyboards and Mice



iOptNet and iOptNet Jr. OPtical Scrolling Mice - 5 color covers included

MacAlly iOptiNet 3 Button USB $31.99

MacAlly iOptiNet Jr. 3 button USB $27.99

Same as iOptNet, but ideal for travel or smaller hands!

Mac PowerBook Batteries

Apple PowerBook G3 Lombard (yr '99) / Pismo (yr '00) $149.99

Mac PRAM Batteries

3.6V PRAM Replacement Battery $7.9

High-Capacity 3.6V Lithium Cell

4.5V PRAM Replacement Battery $8.9

Standard Rayovac 4.5V Computer Pram Battery

GriffinTech 'Cool Goodies'

Griffin PowerMate USB $44.9

Rotary Audio Controller and more!

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PowerBook Processor Upgrades

NuPower Pismo G4/500MHz $299.95 newertechnology

NewerTech is BACK! Back with newer and FASTER upgrades for you Mac! Give your PowerBook G3 FireWire (aka yr2000/Pismo) G4 Power! Have the full capabilities of the Altivec engine at your disposal providing a night an day difference in performance for all Altivec enhanced applications as well as OS X at large!

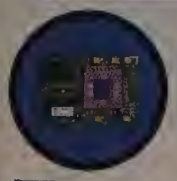
BlueChip (Lombard) LS G4/500MHz with 1MB 2:1 $397.99 PowerLogix

Same machine on the outside, but now fully G4 Enabled with Altivec can be yours on the inside!

Crescendo WS G4/500MHz with 1MB 2:1 $395.99 SONNET

Upgrade your Wallstreet I/II G3 PowerBook (any speed) to the power of a G4/500MHz with Altivec! Full steam ahead for all the Altivec enhanced Applications and OS X!
As an added bonus, you can also have up to 512MBs of memory now too!

OWC Mercury ZIF Upgrades OWC



G4/450MHz with 2:1 1024k L2 cache $179.99
G4/500MHz with 2:1 1024k L2 cache $249.99

Upgrades for PowerMac G3 Beige, G3 Blue & White, G4 'Yikes' PCI. High Quality, High-Performance, High-Reliablity. OWC uses ONLY processors rated for the speed advertised, If not faster!

Upgrade your PowerMac 7300/7500/7600/8500/8600/9500/9600; PowerMac Servers;
and Compatible Clones to the Power of a fast G3 or G4 Processor and RUN OS X TOO!

Only from OWC, XpostFacto is a FREE software utility that allows Apple OS X to be used on MANY Legacy PowerMac Models. With only THREE EXTRA CLICKS, you can have your Pre-G3 PowerMac up and running with OS X just like the Mac models Apple does support! Check it out - http://eshop.macsales.com/osxcenter/

OWC buys back your old processor when you upgrade! Visit www.fastermacs.com or call for details! $$$

G4 & G4 PCI Upgrades SONNET

Upgrade your PowerMac 73/75/76/85/86/95/9600; UMax S900/J700; PowerComputing PowerCenter/PowerTower/PowerWave to a faster G3 or G4 Processor today! A 2nd Life for your still VERY capable and potentially VERY powerful, trusty Mac! Fully compatible with all software and hardware; supports Apple OS 8.6 - 9.2.2, OS X 10.1 and higher. Note: These upgrades replace your existing processor dauthercard, they do NOT take up a precious PCI slot!

Crescendo G4/800MHz 1MB $379.95
Crescendo G4/700MHz 1MB $289.95
Crescendo G3/500MHz 1MB $179.95
Crescendo G3/450MHz 1MB $139.99

AGP Processor Upgrades

G4/800MHz and up to DUAL G4/1.2GHz PowerMac Upgrades

Get 2X, 3X, even more than 5X the performance from your existing Apple G4 Cube or PowerMac G4/350-733MHz AGP Equipped Model! Extreme speed is just a simple processor upgrade away!

Specify PowerMac G4 AGP or Cube when ordering *Dual 1GHz for PowerMac G4 AGPs only.

Encore / ST AGP Upgrades SONNET

Sonnet upgrades for **Apple G4 Cube**, PowerMac G4 Sawtooth, AGP Graphics, Gigabit Ethernet, Digital Audio, QuickSilver, Server models 350MHz through 1GHz, including Dual Processor models.

Encore ST G4/800MHz with 256K L2 on-chip, 2MB DDR L3 Cache $359.99*
Encore ST G4/1GHz with 256K L2 on-chip, 2MB DDR L3 Cache $559.99**
Encore ST G4/1.2GHz with 256K L2 on-chip, 2MB DDR L3 Cache $679.99*

*** Cube Installation Kit to use Encore G4 / 800MHz or G4/1.2GHz in G4 Cube $29.00**
**** Cube Installation Kit to use Encore G4 / 1GHz in G4 Cube $79.95**

Giga G4 AGP Upgrades Giga

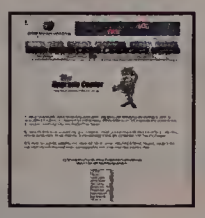
Giga Design upgrades for PowerMac G4 Sawtooth, AGP Graphics, Gigabit Ethernet, Digital Audio, QuickSilver, Server models 350MHz through 1GHz, including Dual Processor models.

Giga G4/800MHz with 256K L2 on-chip, 2MB L3 cache $299.95
Giga G4/1GHz with 256K L2 on-chip, 2MB L3 cache $479.99
Giga G4/1.2GHz with 256K L2 on-chip, 2MB DDR L3 cache $589.99

PowerForce G4 AGP Upgrades PowerLogix

PowerLogix upgrades for **Apple G4 Cube**, PowerMac G4 Sawtooth, AGP Graphics, Gigabit Ethernet, Digital Audio, QuickSilver, Server models 350MHz through 1GHz, including Dual Processors models.

PowerForce G4/800MHz with on-chip 256k L2, 2MB L3 cache $325.99
PowerForce G4/1GHz with on-chip 256k L2, 2MB L3 cache $489.99
PowerForce G4/1.2GHz with on-chip 256k L2, 2MB L3 cache $599.99
PowerForce G4/800MHz x2 DUAL with 2MB L3 cache $749.99
PowerForce G4/1GHz x2 DUAL with 2MB L3 cache $889.99
PowerForce G4/1.2GHz x2 DUAL with 2MB L3 cache $1089.99



See all the upgrades we have for your specific Mac with the MyOWC Compatibility Guide:
http://eshop.macsales.com /MyOWC/index.cfm

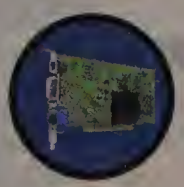
APPLE OS X 10.2 'Jaguar' $79.99!

APPLE OS 9.1 ONLY $49!
CD with license

ATI Video Cards ATi

Radeon 9000 Mac 64MB DDR AGP Card $167.99

Get more from your AGP equipped PowerMac G4 and unleash its Video potential with the ATI Radeon 8500 MacEdition! Compatible with any PowerMac G4 that has an AGP slot, this upgrade provides superior 2D/3D display acceleration for high performance gaming and video applications. A great upgrade for Apple OS 10.2 Quartz Xtreme video acceleration too - which requires 32MB V-RAM MINIMUM!



Radeon 7000 Mac 32MB DDR PCI Card $119.99

Unleash the power of your PowerMac - Don't let video slow you down anymore!
Highly Accelerated 2D/3D • HYPERZ Technology for improved performance • Powerful 3D Graphics • Performance • Open GL Support (Quake Tests show Frame Rates upwards of 50 PER SECOND!) • Full Quicktime Support • Built In Video Out (S-Video & Composite) for TV/NTSC display • Full DVD Playback supported • Resolutions from 640x480 to 2048x1536 supported! • Features Standard VGA and DVI display connectors - Use any standard display or DVI Flat Panel! • Supports Apple OS 9 and OS X

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Basic Final Cut Pro Editing System Includes:

- Power Mac G4/**1GHz** Computer
- Final Cut Pro ver. 3.0 editing software
- Total of 256MB of memory
- 60GB System Drive • 120GB of ATA/100 storage
- CD-RW rewritable CD writer • Final Cut Training Disk
- Mitsubishi Diamond Pro 930 19" Monitor
- Apple Care-three year warranty
- Complete System integration & testing

$3,399.95

Upgrade to • 512MB memory • 240GB Storage Drive
- 2nd Mitsubishi diamond Pro 930 19" Monitor • Boris Graffitti and Custom Keyboard Keyboard

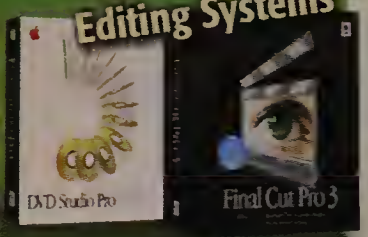
Add $1,300

SDI Editing System Includes:

- G4 w/**Dual 1.42GHz** Processors,
- 120GB Hard Drive.
- Total 1GB memory
- DVD-R/CD-RW SuperDrive
- ATTO Express PCI Dual SCSI Contorller
- RoukeData 144GB (4x36) Removeable 10k Dual Channel Array
- Choice of: AJA Kona 10-bit Capture Card OR – Digital Voodoo D1 64RT 10-Bit Card
- Sony PVM 14N6U NTSC Monitor
- Final Cut Pro 3.0 Professional Editing Software
- 2 Mitsubishi Diamond Pro 930 19" Monitors
- Post-Op iMedia Keyboard
- Apple Care-three year warranty

$10,995.00

Final Cut Pro Editing Systems



PowerBook 1GH Editing Systems

- 1 GHz Processor,
- 60GB Hard Drive.
- 15.2" Wide-Screen TFT LCD Display
- DVD-R/CD-RW SuperDrive • Total 512B memory
- 64MB DCR Video Memory • Microsoft Office
- Final Cut Pro 3.0 Editing Software
- LaCie 120GB External Firewire Drive
- Boris Graffiti Character Generator • Carry Case

$4,699.95

17" Wide DVD Edit System

- Same as above plus 17" Wide-Screen TFT LCD
- Total 1GB memory • Apple DVD Studio Pro
- Boris F/X software

Add $1300

Analog DVD Authoring System Includes:

- Power Mac G4 with **Dual 1.25GHz**
- 80GB Hard Drive • Total of 1GB memory
- DVD-R/CD-RW SuperDrive
- 240GB (2x120) of IBM ATA/100 storage
- Matrox RTMac Realtime Capture Card
- Final Cut Pro 3.0 Professional Editing Software
- Apple DVD Studio Pro DVD authoring software
- 2 Mitsubishi Diamond Pro 930 19" Monitors
- Sonnet Tempo Raid Controller
- Artel Boris FX 6.0 Software • Post-Op iMedia Keyboard
- Artel Boris Graffiti Character Generator Software
- Final Cut Pro Tutorial CD
- Apple Care-three year warranty

$7,299.95

Uncompressed System Includes:

- G4 w/**Dual 1.42GHz** Processors,
- 120GB Hard Drive.• Total 1GB memory
- DVD-R/CD-RW SuperDrive • ATTO Express PCI Dual SCSI Contorller • RoukeData 144GB (4x36) Removeable 10k Dual Channel Array • Final Cut Pro 3.0 Editing Software
- Pinnacle CineWave Uncompressed Capture Card
- Sony PVM 14N6U NTSC Monitor
- 2 Mitsubishi Diamond Pro 930 19" Monitors
- Post-Op iMedia Keyboard • Apple Care-three year warranty
- Choice of Digital (SDI) or Analog Breakout Box

Upgrade to CineWave RealTime $1500 ($2199 value)

$12,794.95

Avid Xpress DV Editing Systems

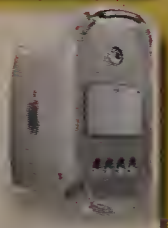
PowerBook G4 Portable Xpress DV Editing system

- Apple PowerBook G4 with 1GHz Precessor
- 15.2" Wide Screen TFT LCD Monitor
- 60GB System Drive • 512MB Memory
- SuperDrive DVD/CD-RW writer • Microsoft Office X
- Lacie Firewire 120GB External Drive • Computer Case
- Boris Graffiti Character Generator software
- Avid Xpress DV v.3.5 editing software
- AppleCare-Three year warranty

$4,999.95

Same system with **PowerBook G4 with 17" Wide TFT Screen** **$5,499.95**

Power Mac G4 1GHz Xpress DV Editing System



- Apple Power Mac G4/1GHz Computer
- Avid Xpress DV v.3.5 editing software
- 512MB of memory • 60GB System Drive
- 120GB of ATA/100 storage
- Combo Drive DVD/CD-RW CD writer
- AppleCare-Three year warranty
- Complete System integration & testing

$3,599.95

Upgrade above system to: • Apple Power Mac G4 Dual 1.25GHz and 80GB System Drive • 1GB Memory • SuperDrive DVD/CD-RW **Add $1299**

Power Mac G4 Dual (1.42GHz) Xpress DV Editing system Includes

- Apple Power Mac G4 with Dual 1.42GHz Processors
- 120GB System Drive • Avid Xpress DV v.3.5 Power Pack
- 240GB (2x120) of ATA/100 storage
- Sonnet Raid 133 Controller Card
- Total of 1GB of memory • Post-Op EZ Keyboard
- SuperDrive DVD/CD-RW
- Artel Motion Graphics Pack with Boris Red, FX, Graffiti Pro and Continuum
- 23" Wide HD Cinema Display
- Complete System integration & testing
- AppleCare-Three year warranty

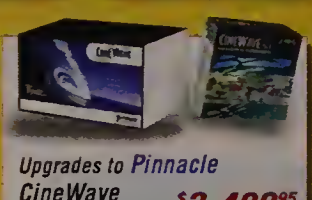
$9,499.95

Igniter Lite **$999.95**
Igniter Compnent **$2,999.95**

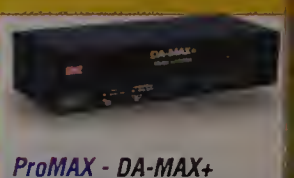
Igniter RT **$1,899.95**
RT Component **$3,499.95**
RT SDI **$3,499.95**

Digital Voodoo D1 64RT SDI 10 Bit Card for Final-Cut **$2,995.00**

AJA Kona SD 10 bit card for OS-X **$2,795.00**



Upgrades to Pinnacle CineWave **$3,499.95**
Pinnacle RT Option **$1,999.95**

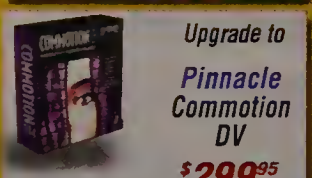


ProMAX - DA-MAX+ 10 Bit Multi-Format Converter **$1699.95**

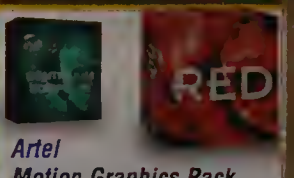
Apple LCD Cinema Displays
20" Wide **$1,299.95**
23" HD **$1,969.95**

Post-Op EZ Keyboard for Final Cut **$119.95**

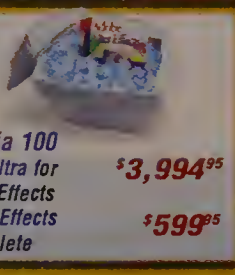
Boris FX **$199.95**
Boris Graffiti **$199.95**



Upgrade to Pinnacle Commotion DV **$299.95**
Pro Editon **$599.95**



Artel Motion Graphics Pack Continuum and Boris Red **$999.95**



Media 100 ICE-Ultra for After Effects Final Effects Complete **$3,994.95** **$599.95**

After Effects 5.5 **$679.95**
AE Production Bundle **$1,599**
AE Product. w/Photoshop **$1,999**

4-Port Firewire Hub **$79.95**
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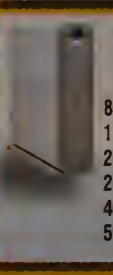

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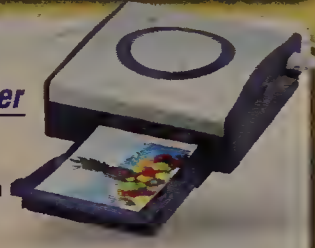

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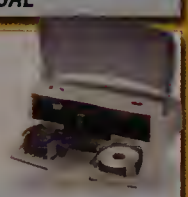

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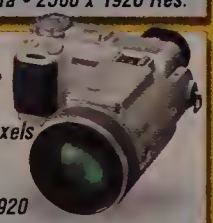

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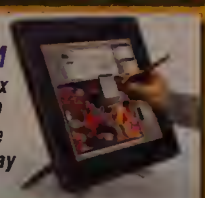

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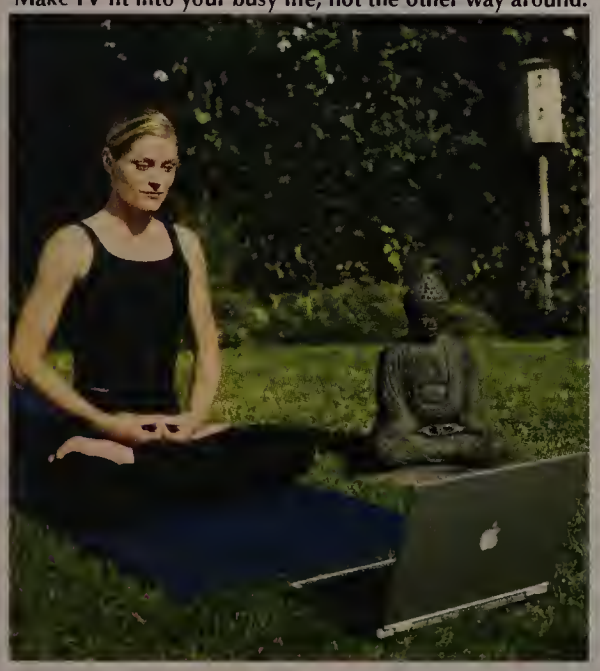

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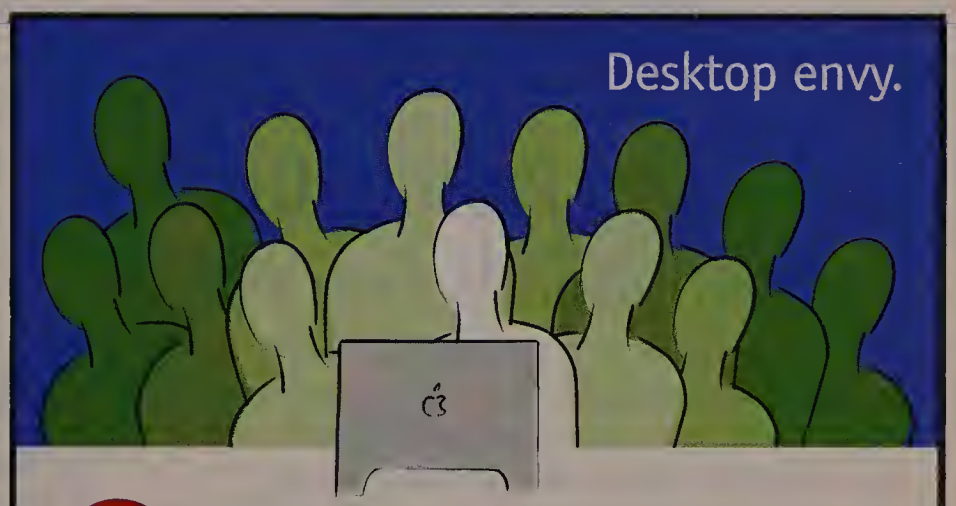

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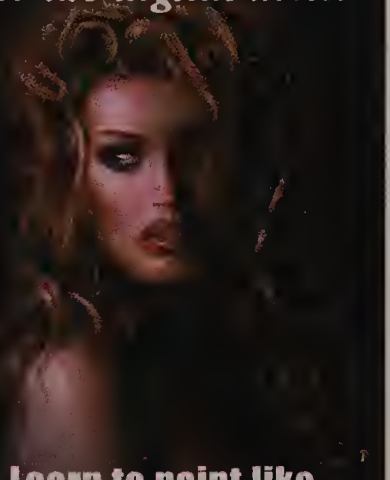

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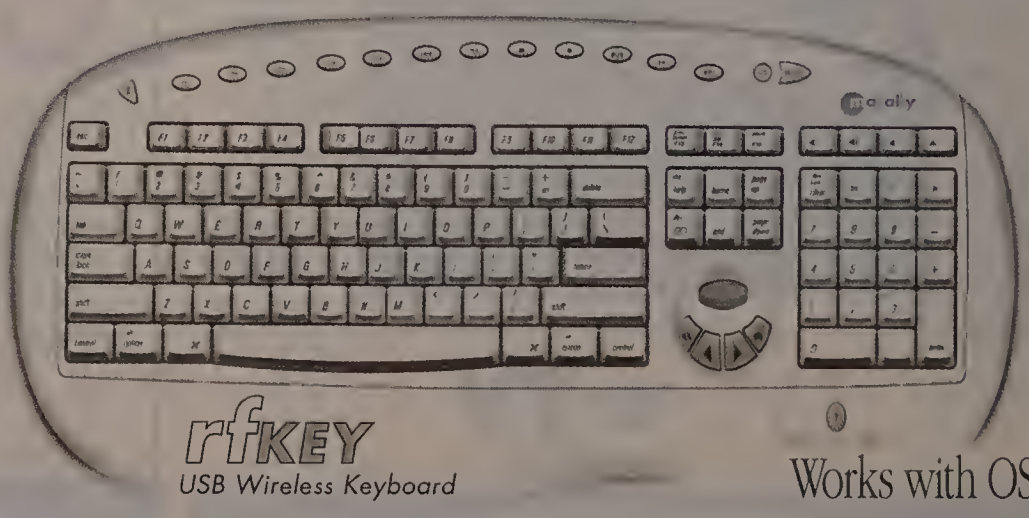

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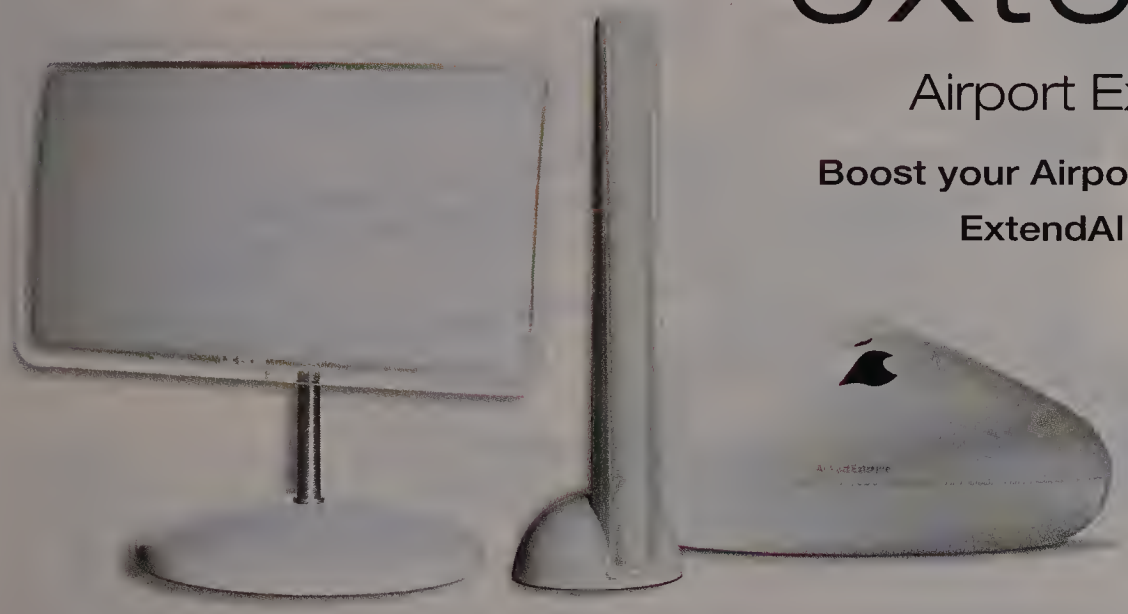

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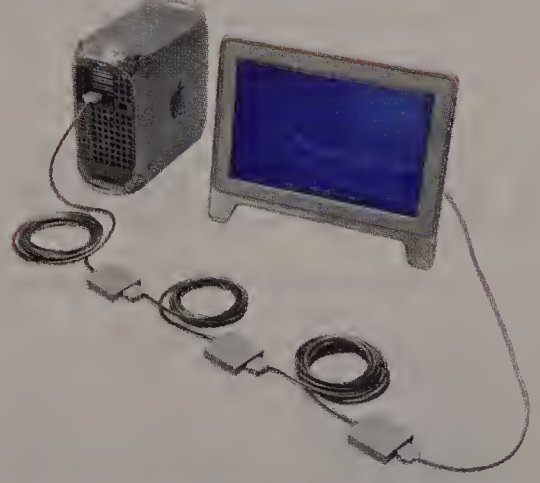

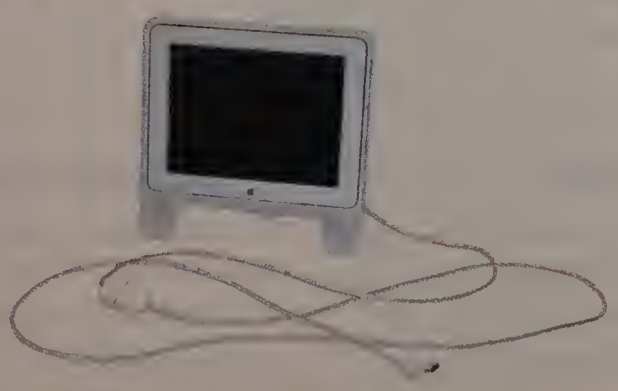

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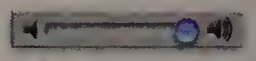

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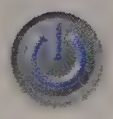

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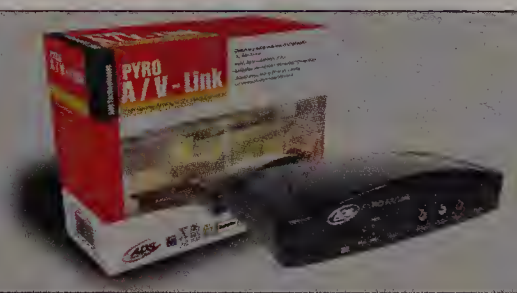

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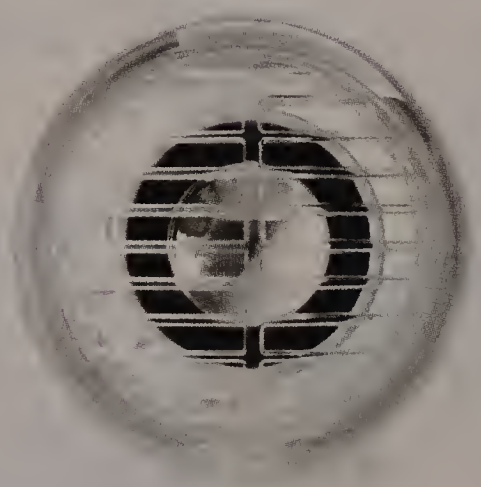

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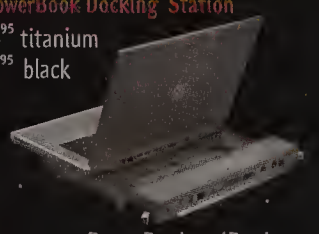

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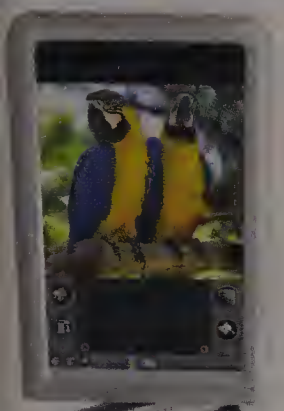

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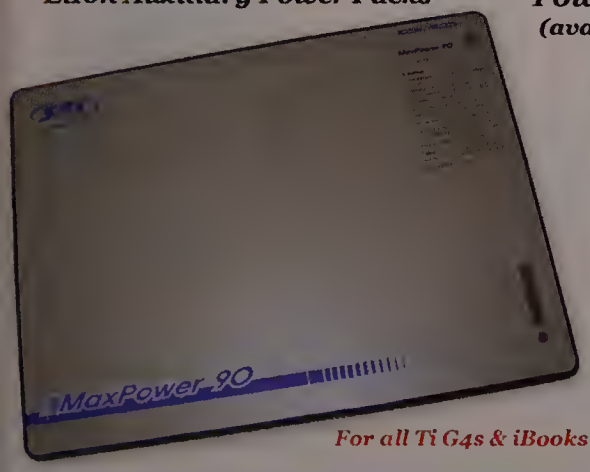

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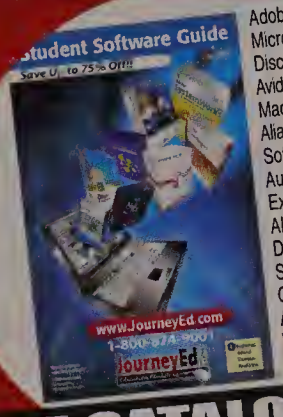

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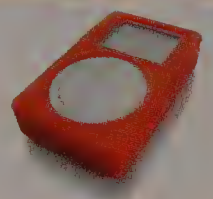

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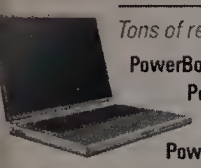

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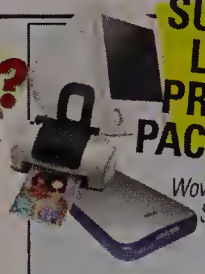

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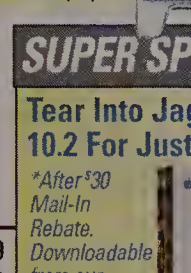

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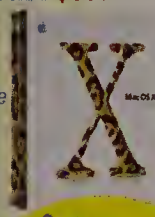

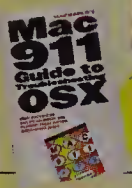

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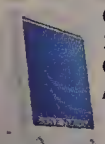

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continued from page 128 >

machine, and all but iDVD 3 are available online at no cost. Final Cut Pro has become a market leader, and Final Cut Express may well do the same. In each of these areas, Apple's own products lead the pack—so Apple shuts out the competition. The company obviously considers media sharing important; it's not only in every iLife product but also a major marketing issue. If those media-sharing features are that useful, they're useful enough to share with other Mac developers. If the company fears that third-party programs will eclipse iLife applications instead of complementing them, the solution is to improve iLife, not to lock the door from the outside.

No one knows what kind of amazing capabilities we'd see if third-party developers had access to these media-sharing features. Even worse, the decision-makers at Apple don't seem to care.

Open to Competition

Apple's nonsensical openness policies effectively say that it's good to let outside programmers have free access to the very core of Mac OS X (via Darwin, Apple's open-source project) but bad to let users share their music playlists or edited video sequences.

This isn't a new philosophy for Apple. Developers of programs such as DragThing ($25; www.dragthing.com) would love to offer the status icons and task-specific menus that OS X applications provide in the Dock, but Apple provides no way for them to do it. Nor does OS X allow you to get rid of the Dock or completely replace it with another program. If the bouncing, zooming pile of quality called the Dock is as good as Apple insists it is, the company shouldn't be afraid of competition—or of customers who want alternatives.

> If the Dock is so good, why is Apple afraid of competition?

Apple's Mail program can tell whether someone you're sending mail to is logged on via iChat, but no other program can. Both iChat and iSync install menu extras, though Apple's documentation says that applications shouldn't do that. Don't tell me these features aren't stable enough for third-party programs to use. If they're stable enough for Apple to use on every OS X system, they're stable enough for other programmers to use.

If an open file format is such a good idea for Keynote, why isn't it a good idea for AppleWorks, too? If iLife programs benefit from working together, why can't other programs join the party? When Apple embraces openness for *all* its software, I can stop grimacing when Steve Jobs and Avie Tevanian smile at their latest "open" endeavors. I've seen that smile before—on the face of Bill Gates.

New *Macworld* columnist MATT DEATHERAGE is the publisher of the Mac newsletters MDJ and MWJ; subscriptions are available at www.macjournals.com.

BY MATT DEATHERAGE

Apple Fears the Tactics It Uses on Competitors

Open, Says Me

WHEN STEVE JOBS ANNOUNCED APPLE'S NEW PRESENTATION program, Keynote, he bragged that it used an open file format—in contrast to the format a little-known program from Microsoft, called PowerPoint, uses. Apple's CEO said that because Keynote had an XML-based file format, developers could create programs that queried databases and automatically created presentations, among other possibilities.

That may be true, but only Keynote provides a full, rich interface for creating and playing back Keynote presentations. Any Keynote-compatible programs that spring up will only enhance the value of Keynote presentation files. Sure, someone might try writing a less expensive Keynote clone, but Apple still controls Keynote's file format. Do you really think Apple would work to ensure that Keynote files supported features found only in competing programs? If you do, I know this guy in Nigeria who needs your help with a few simple financial transactions.

Open for Whom?

Whenever Apple needs to bash its competition while promoting an underdog product, the company is happy to brandish the club of "openness" and "standards." But when one of Apple's own products sits in the catbird seat, the company's "open-is-powerful" rhetoric disappears faster than Carbon programs from Avie Tevanian's PowerBook.

Want an example? AppleWorks owns the low-price Mac integrated-software market. A decade ago, there were four or five such suites, but even Microsoft eventually threw in the towel and gave up on the Mac version of Microsoft Works.

How much openness does AppleWorks offer? Beyond its admirable AppleScript abilities—none. There is no plug-in interface to extend AppleWorks. Its file formats aren't documented. Apple doesn't even provide the AppleWorks file format to DataViz for its translation utility MacLinkPlus Deluxe ($100; www.dataviz.com). To convert an AppleWorks 6 file to another format, you must first save it in AppleWorks 5 format from inside version 6.

Now imagine that today's Apple had just announced AppleWorks and was taking on a powerful low-end integrated suite from Microsoft. How much would you bet that it would have an open file format as one of its primary selling points, just as Keynote does?

PowerPoint rules the presentation roost on both Windows and Mac OS. So, with Keynote, Apple deployed its "openness" weapon: an incompletely documented XML file format plus PowerPoint-import and -export features. Ironically, Keynote can translate PowerPoint files only because developers can obtain specifications for PowerPoint's file formats. Without that critical assistance from Microsoft, Keynote could never really compete with PowerPoint.

Segregated Integration

It's a pity that Apple's glasnost doesn't extend to its market-leading applications. The company is staunchly in favor of Apple programs sharing themselves freely—with other Apple programs. Check out the new iLife package: iPhoto 2 displays your iTunes 3 library so you can easily select a slide-show soundtrack. iDVD 3 and iMovie 3 both read not only your iTunes 3 library but also your iPhoto albums. iDVD 3 reads iMovie 3 project files.

How much of this cooperation applies to other programs? Here's a hint: even AppleWorks is more open.

Although the ability to share an iTunes library already existed in iTunes 3, no non-Apple photo or DVD program can use the feature; Apple hasn't documented it. Because iTunes is descended from SoundJam—a program originally developed by people who actually believed in sharing information—you can script it, export your library in XML format, reimport it, and even burn playlists in Roxio's Toast Titanium ($100; www.roxio.com).

So why can't Toast read your iTunes 3 library directly, to eliminate exporting and drag-and-drop—the same kinds of integration Steve Jobs said were too inconvenient for iLife? Why can't every MP3 program read your iTunes playlists? Why can't image managers such as Extensis's Portfolio ($200; www.extensis.com) and iView MediaPro ($90; www.iview-multimedia.com) work with your iPhoto libraries? Why can't Adobe Premiere import your iMovie 3 projects? To burn a Video CD with Toast Titanium, you need to use iMovie's Export command. But iDVD 3 and Apple's new $299 Final Cut Express read iMovie 3 projects directly—no exporting from iMovie is required. Are you detecting a pattern yet?

> Apple is staunchly for openness—with itself.

The iLife applications are powerful, easy to use, and essentially free—they come preinstalled on every new

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